FLIGHT

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A STUDY AT 'OHANNISTHAL.—Capt. Engelhardt, on his Wright biplane, flying at the Johannisthal Aerodrome.

FLIGHT

AUGUST 27, 1910.

THE CONTROL OF AEROPLANES.

By SIR RICHARD PAGET, BART.

THE problem of controlling the movements of an aeroplane may be viewed by the driver from two diametrically opposite standpoints. He may consider the direction in which he wants the *machine* to move, and obtain that motion by moving the levers in the *same* direction; or he may consider the direction in which he wants to move *himself*, and obtain that motion by pressing against the levers so that they move in the *opposite* direction.

At present, these two methods of control are combined indiscriminately in many machines. The method of direct action, in which the levers are moved in the direction in which it is desired to move the aeroplane, is seen, for example, in the warping of a Wright or a Farman biplane, while cases typifying the other system, in which the operator pushes himself in the direction in which he wants to go by thrusting against the lever, are those of the foot-steering in the Farman, Blériot, and other machines.

In some cases these methods are combined with a third, in which the direction of the movement of the controlling-handles is purely arbitrary, and bears no direct relation to the direction in which the machine is desired to move, as, for instance, is the case in the steering of a Wright machine by means of a to-and-fro motion of the lever.

If it is granted that the method of control should be such as requires the minimum of conscious thought and the maximum of automatic action on the part of the operator, it must almost necessarily follow that the method of control should be the same for all required movements. It can hardly be sound practice to steer by the method of reaction, and to warp and elevate by the method of direct action, while still less can it be right to combine either of these with an arbitrary motion.

Thus the question arises, which method is preferable, that of direct action or that of reaction?

Modern systems of aeroplane control by direct action are the descendants of the control of the bicycle and the motor car, in which, for reasons of mechanical simplicity, the direct system of control has been adopted, and it would appear that for this reason the claims of the reaction system have been largely overlooked.

It may be admitted that when once a beginner has practised and learnt the movements, he can, without thought, operate the control handles by the direct method without difficulty, so that it becomes perfectly natural for him to move these handles in the direction in which he desires the machine to go. The same can undoubtedly be said for the reaction method, for in that case the operator has only to think of the direction in which he himself wishes to go, and to push himself into the desired position by pushing or pulling at the handles, which are thus moved in an opposite direction. That this is the case is proved by the fact that there is no difficulty in learning to steer a boat by means of a tiller or to maintain the balance of a canoe by means of a paddle, this latter being an excellent instance of control by steering and balance by the reaction method.

It may be admitted, therefore, that so far as normal operation is concerned, there is probably nothing to choose between the method of direct action and the method of reaction. But, ultimate safety in flight depends not on what the operator does normally, but what he will do instinctively under abnormal conditions, such as when his balance is upset by a sudden gust of wind, an "air-hole," or the draught from another machine. In such cases, a point is easily reached in which the operator can no longer maintain his balance independently of the machine, and it is then that the method of direct action seems to fail. Direct action control essentially presupposes that the operator himself always represents a fixed point, from which the machine may be controlled by moving the various handles in the direction required, hence the system must fail if the operator loses his balance and ceases to be fixed in space. It also presupposes that the operator never loses his head, for in that case general experience shows that the operator makes an instinctive effort to redress his balance by endeavouring to pull or push himself upright by means of whatever handles or supports are available. Just as a man in a canoe, feeling himself falling over to the left, would instinctively press his paddle down on the water on the left, so a man in an aeroplane, feeling himself in danger of falling to the left, will press down on the left or endeavour to pull himself up to the right.

It has, for example, been observed by the pilot of a Blériot monoplane, that if the engine stops in mid-air, his instinctive action has been to pull the control-handle towards himself, the unconscious underlying idea being doubtless to pull himself and the machine forwards. As matters are at present arranged, the Blériot elevating mechanism is operated by direct control, and the instinctive movement results in elevating the head (or rather depressing the tail) of the machine, which is the reverse of the action desired. If the reaction method were adopted for the elevator control, the instinctive action would depress the head and elevate the tail of the machine, and cause it to glide down safely.

Instinctive action is, indeed, the whole cause of the initial difficulty to ride a bicycle, for when the rider begins to fall over to the right he instinctively tries to readjust his own balance by pulling on the left handle of the machine. Unfortunately for him, the control of bicycle balance is by the method of direct action, and not that of reaction, and the instinctive movement only accentuates the evil.

The risk of learning on a bicycle is very small, while that of learning on an aeroplane is very great; so that, for flying, the advantage of automatic action associated with the indirect system of control is worth obtaining, especially when it is remembered that this advantage is again apparent in the last resort, when the operator has lost his balance and returns once more to the condition of a drowning man clutching at a straw. In this latter case every instinctive effort made by the operator to readjust his own balance, by pressing or pulling at the available supports, automatically tends to readjust the balance of the machine; whereas, if the method of control is direct, these instinctive actions accentuate the loss of balance.

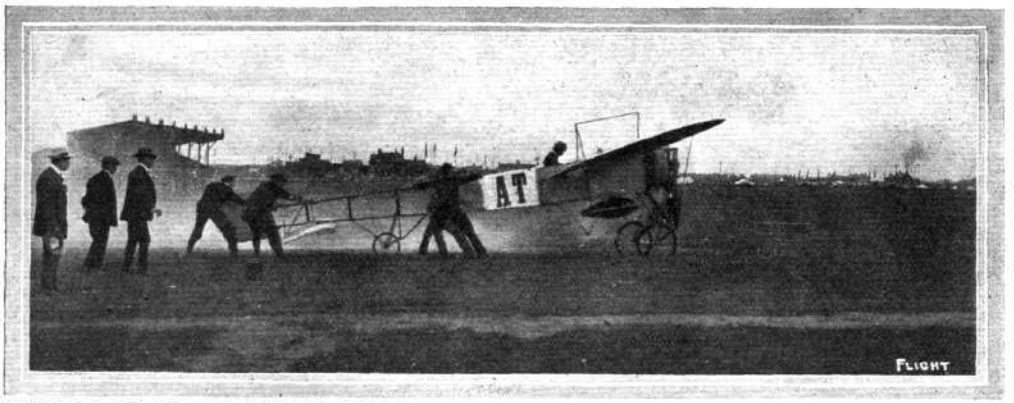
It is most desirable that an experiment should be made as to the practical effect of linking up the various controlling-handles so that each of these controls is operated on the reaction system, for it seems highly probable that the system will be easier to learn initially, as easy to operate normally, and much safer in an emergency, than the system of direct control.

FLIGHT PIONEERS.

MR. JOHN B. MOISANT.

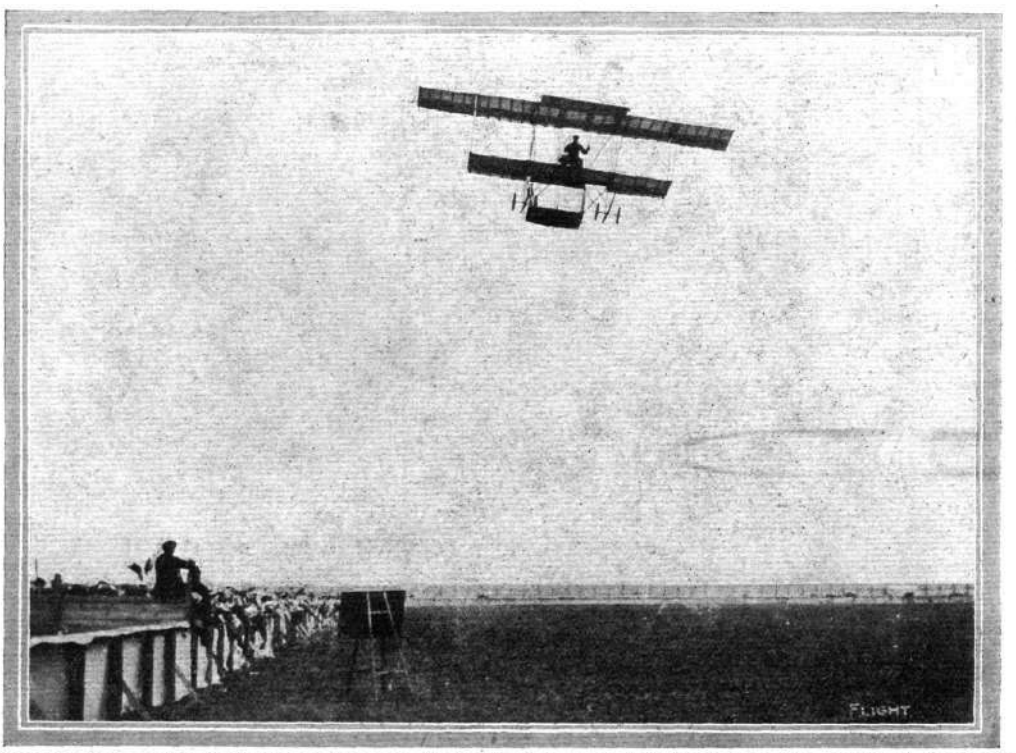
BLACKPOOL FLYING CARNIVAL—*concluded.*

By OUR SPECIAL COMMISSIONER.



RESTRAINING AN IMPATIENT MOUNT.—Cattaneo, at Blackpool, starting for the speed contest, in which he made three laps in 3m. 36s. = 50 m.p.h. Note the exhaust from engine and position of extra petrol tank. A general view of the aerodrome, with the Tower in the distance, is obtained in this picture.

If the elements had conspired together to prevent any flying at Blackpool, they could hardly have been more successful, since the total flying on the last four days of the meeting occupied less than half-an-hour, and this was contributed entirely by Mr. Grahame-White. After the successful flights on Tuesday, there was a fairly large attendance on Wednesday, in spite of the fact that the anemometer was registering in the neighbourhood of 30 miles an hour just after two o'clock. The people, however, occupied themselves with the inspection of the machines in the hangars, a large section of them watching the erection of the Henry Farman racing machine belonging to Gibbs, which had arrived on the previous day. The captive balloon which was kept half inflated in the hangar enclosure also came in for a good deal of interest and comment, as did Roe's triplane, which was undergoing repairs. As the afternoon drew on a short shower dispersed a lot of the people, but many stayed to the close in the hope of seeing some flying.

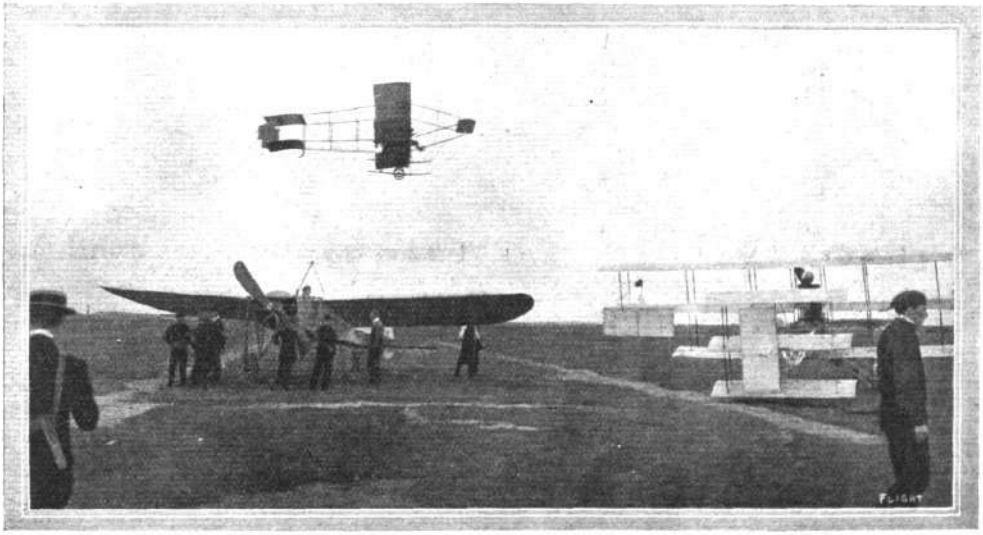


Robert Loraine coming down the aerodrome on his Henry Farman at Blackpool upon the occasion of his recent fine flight.

Miss Huntley Walker, daughter of Mr. Huntley Walker, the organiser of the Blackpool Aviation Meeting, pinning a button-hole in Grahame-White's coat just for luck.

Bartolomeo Cattaneo at Blackpool in the Blériot which holds the British long-distance record.

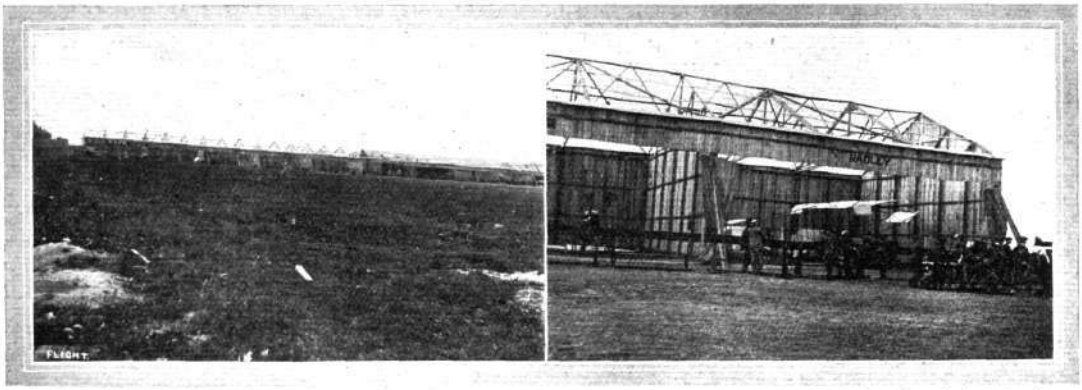
Thursday morning was a distinct improvement as regards weather, although the wind was rather troublesome. In the aerodrome Mr. Grahame-White brought out his English-built Henry Farman machine with the intention of carrying out some experiments on the suitability of an aeroplane as a mail carrier. The mails, consisting of several thousand postcards, were carried in a bag labelled "Aeroplane Mail," which was strapped on the machine behind the aviator's seat. Previous to this, the machine had been modified by bringing the tail about 6 ft. nearer the main planes, and when Grahame-White set off along the aerodrome it was apparent that the alteration left something to be desired in the adjustment of the machine, and after a short and exciting flight the machine was wheeled back to the hangar for attention. Just before noon, Roe's triplane came out with one of his pupils, Mr. Pixton, in charge. Mr. Pixton succeeded in making several long hops, but owing to the wind he did not attempt to do anything further—a very wise step. About two o'clock the weather, which had been very threatening, took a decided step for the worse, and heavy rain commenced to fall, driving the people to seek shelter in the spare hangars. The rain fell without ceasing during the rest of the day, and no attempt at flight was made. Thursday's rain was followed by a severe gale, and the hangars were in a sad state on



ONE, TWO AND THREE PLANES.—Grahame-White, in his Henry Farman biplane, flying over Drexel's Blériot monoplane and Roe's triplane.

Mrs. Delacombe, Mr. Drexel, and Mrs. Williamson watching Grahame-White's attempted experiments with the mails at Blackpool on the last day of the meeting, Aug. 20th.

which requires a minimum time of twenty minutes flying. With the aid of one of his assistants and several bystanders, he succeeded in getting off, and as the wind was now very strong, his career was followed with the closest attention. During the Blackpool meeting Grahame-White has given several exhibitions of flying in high winds, and in this, the last flight of the meeting, he put up a magnificent performance. As soon as the news that Grahame-White was flying became known in the hangars, there was a rush to the aerodrome and, scattered here and there in small groups, the aviators and mechanics discussed the flight, showing the greatest apprehension for the safety of the aviator. Handicapped by the readjustments made in the machine itself and in the grip of the relentless wind, his flight was a revelation of the possibilities of the aeroplane in the hands of a skilful pilot. Many times during this flight disaster seemed imminent, only to be averted in the nick of time, the machine oscillating violently with rapid changes of altitude as it met the gusts. Grahame-White came down after about 17 mins. flight, and for his fine work was awarded the Duration Prize, receiving the heartiest congratulations on his grand effort. The strain on his arm had been so great that he suffered from severe cramp, and some little time elapsed before he recovered. This flight secured the daily and weekly prizes for longest time in the air and longest distance flown, amounting in all to £400, for Grahame-White. The prize list for the week, other than those previously announced, is as follows :—



WHAT THE STORM DID AT BLACKPOOL.—General view of the hangars after the gale had finished with them, and on the right Gibbs' Henry Farman in shed with roof blown off. The helpers on the right are transferring a wing of Drexel's Blériot to a place of safety in Lumb's permanent hangar.

Friday morning. Many of them were roofless, the wind having torn off the waterproofing, leaving the aeroplanes in a precarious condition. Luckily, no damage was done to the machines, and haste was made to transfer them as quickly as possible to those hangars which still possessed a roof. As a consequence, the hangar of Mr. Lumb, a local aviator, which is a permanency, contained no fewer than four machines. The captive balloon, which had only ascended once, on a trial spin late on Tuesday afternoon, was damaged, the envelope being slit open, whilst a large refreshment tent collapsed, with disastrous results to its contents. During the afternoon most of the machines were partially dismantled, the two biplanes of Grahame-White and Tetard only being intact. With the anemometer ranging from thirty to sixty miles per hour, flying was hopeless, and the prospects of flying on Saturday were very remote. Saturday opened dull and gusty, but the sun broke out just after two o'clock, and the weather conditions became much better. In spite of previous disappointments there was a good attendance at the aerodrome when Grahame-White came out at 3.30 p.m. on the English-built Henry Farman machine, with the intention of taking mails to Southport. To test the machine he made two circuits of the course, his flight being unsteady owing to the treacherous wind. On alighting, the machine underwent further adjustments, the relative angle between the tail aileron and the elevator being altered. Grahame-White was up again at five o'clock, but again found the wind too strong for his journey to Southport. At this time the Blériot machines of Drexel and McArdle were being rapidly assembled in preparation for flights, but as the velocity of the wind began to increase the chances of these machines coming out were problematical. At a quarter past six Grahame-White was seen coming across the ground and announced that he was going for the duration prize of £50,

Mrs. Arthur adjusting the wire strainers on Gibbs' racing Henry Farman at Blackpool.

Daily Prize for Longest Time in the Air.—Grahame-White, £50, 28 mins. 25⅘ secs.

Daily Prize for Longest Distance.—Grahame-White, £50, 11 miles.

Weekly Prize for Longest Distance.—Grahame-White, £150, 26 miles; Tetard, £50, 17 miles.

Weekly Prize for Longest Time in the Air.—Grahame-White, £150, 1 hour 19 mins. 44⅘ secs.; Grace, £50, 53 mins. 41⅘ secs.

Weekly Prize for Altitude.—Grace, £100, height 1,270 ft.

As a result of the week's flying, the prizes awarded are: Grahame-White, £490; Grace, £220; Tetard, £110; McArdle, £30; Cattaneo, £20.

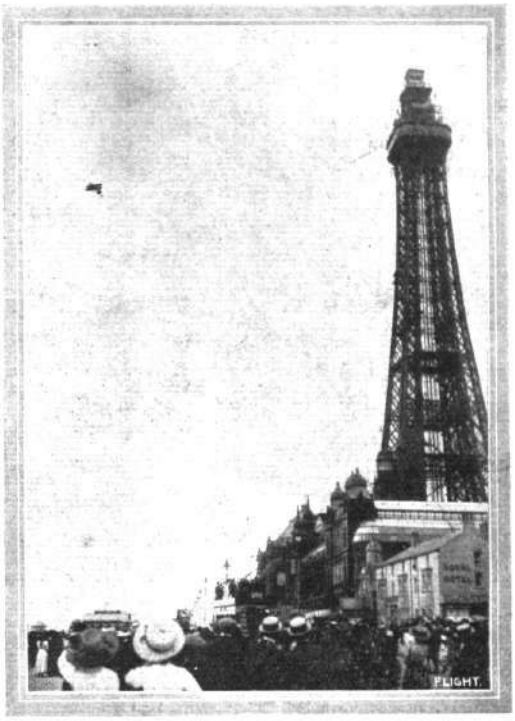
Thus closes the second flying meeting held at Blackpool, and the financial loss is so great that the Lancashire Aero Club are not likely to undertake another meeting. Many things have contributed to this result, the weather being a large factor in preventing the success of the meeting. Lack of support from the municipality, and the thrift of those people who wished to see the flying without paying for the pleasure of doing so, have also handicapped the finances. Mr. Huntley Walker, who was chiefly responsible for the Carnival being held, estimates the deficiency at about £20,000—a sum in which Lloyd's are considerably interested in finding. Incidentally a striking commentary upon the progress made in flying during the past year was afforded by the fact that the prize of £500 for a flight round the Blackpool Tower was not renewed in connection with the recent meetings.

Mr. Cecil Grace at Blackpool.

IN our report of the daily doings at Blackpool our representative stated that the little mishap which Mr. Grace had was due to the fact that he could not locate the switch. Mr. Grace, in pointing out that this is an error, writes:—

"I did locate the switch, but it would not work; in fact, I switched off immediately, and finding the engine would not stop, I turned off the petrol. Turning off the petrol does not stop an engine instantly, as it is bound to continue running until it has used up all the petrol in the pipe leading from the cock to the carburettor. I certainly never should attempt to go up in a machine without previously locating the switch, and once having done so I would not be likely to lose my head to the extent of forgetting where it was."

With all of which we thoroughly agree. Our representative regrets that he must have misunderstood what was said by Mr. Grace immediately after his descent.

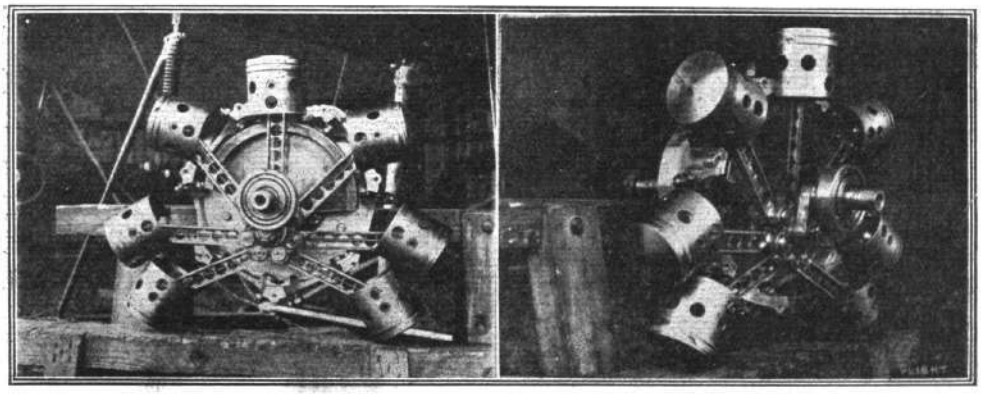


Grahame-White rounding the Blackpool Tower on his Henry Farman during one of his recent remarkable cross-country flights.

Aeronautical Terminology.

"OUR contemporary, FLIGHT, is to be complimented on its very well thought out article styled 'Aeronautical Terminology,' which it published last week. It sets forth a list of terms which should be adopted as standard, and almost without exception these are admirable, for due attention is paid to the words which already have firmly established a place for themselves. At the same time, the proper application of each term is indicated.

"Of all the words in the above list we only dislike 'Aerocar,' or which we might well substitute 'Air-craft,' 'Air-vessel,' or 'Vessel,' for we need not, on the one hand, adhere rigidly to the use of single words while a good compound word can be employed; nor is there need to drag in some derivative of 'air' into them at all. We can heartily commend the article to everyone interested in aviation, and we trust that the daily papers will instruct their reporters to peruse it, for the confusion created day after day by the misuse of words by writers who profess to understand aviation terminology is little short of painful."—*Motor News.*



Views of the Isaacson engine, showing pistons, rods, crank and balance weight. Note method of attaching rods to big end of connecting-rod, and the lubricating pipes running along the centre of the connecting-rods. On the right is seen the master rod at top and method of building up crank.

SPEED-ALARMS FOR FLYERS.

SOME COMPETITIVE DESIGNS FOR OUR £5 PRIZE.

[1] In pursuance of your prize offer in this week's FLIGHT relative of Capt. Bertram Dickson's suggestion as to the utility of a "Speed Whistle," I have much pleasure in forwarding you herewith rough sketches and description to start the ball rolling.

Fig. 1 represents the blade of a small windmill which might be attached to the leading edge of a plane or to an upright.

When going at any speed the windmill will revolve accordingly,

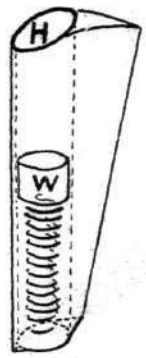


Fig. 1.

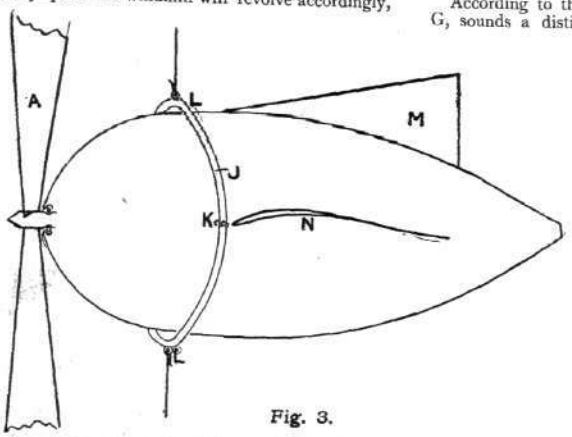


Fig. 3.

and the rush of air past the end of the hollow cylinder, H (preferably cut on the slant), will cause a whistle as with a latchkey.

The note depends upon the depth of the cylinder, so that a weight, W, attached to a tension-spring, S, moves outwards by centrifugal force on the speed increasing.

The application appears sublimely simple on account of absence of any gearing, &c., and low cost, together with lightness and minimum of resistance, but there would be no special warning at a dangerously low speed.

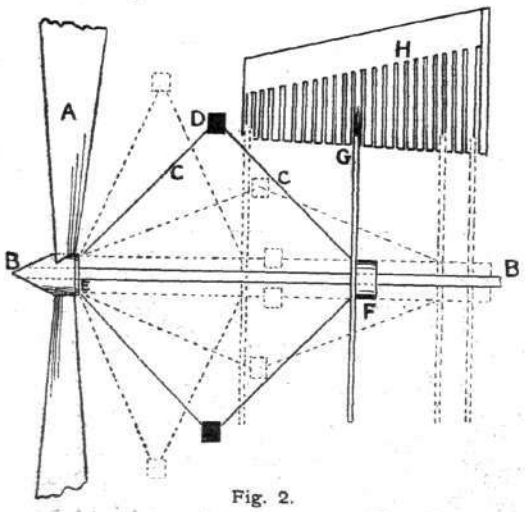


Fig. 2.

Figs. 2, 3 and 4 represent a possibly more interesting device, as it fulfils many of the requirements, and overcomes many of the objections as set forth by Capt. Dickson.

In Fig. 2, A represents a windmill free to revolve on a shaft, B.

Attached to the propeller at E, and suspended to F, are spring governors, C, with a weight, D, as in a gramophone.

The collar, F, is revolvable at the same speed as the fixed collar on the propeller at E. The collar, E, however, is not free to travel along the shaft, but F is.

It is obvious that upon acceleration the weight, D, springs outwards, causing the distance to decrease between E and F.

On the collar, F, is a disc, G, with a suitable number of projecting teeth on the outer rim.

H represents a number of sounding-teeth, as employed in a musical-box or chime-rods of a clock.

According to the speed of the windmill the disc, G, sounds a distinctive tone until an increase or

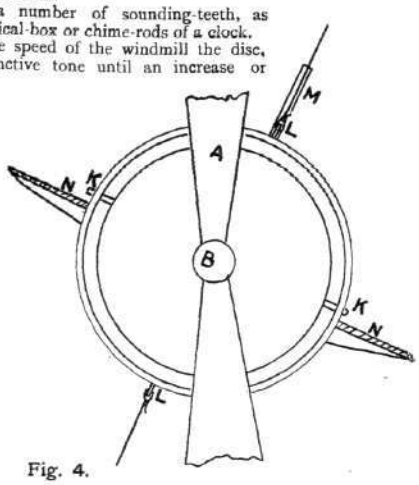


Fig. 4.

decrease of speed causes the disc to revolve against the higher or lower toned sounders.

For normal speeds the teeth could be cut out and then at danger point a musical sound would be noticeable even amongst the various whistling and humming sounds attendant to a machine in motion.

If necessary a torpedo-shaped case could be applied as in Fig. 3 with a fin, M, to regulate direction, and wings, N, for elevation, so that for side winds and up and down motion of the aeroplane the windmill receives a head-on attack of air current.

A convenient method of suspension might be by means of a ring, J, having rings, L, for the wires and holes to receive the pinions, K, of the case. This allows a reasonably free movement of the whole. There are no doubt many similar arrangements possible, but enough for the day.

Bradford. CHAS. H. KRÜGER.

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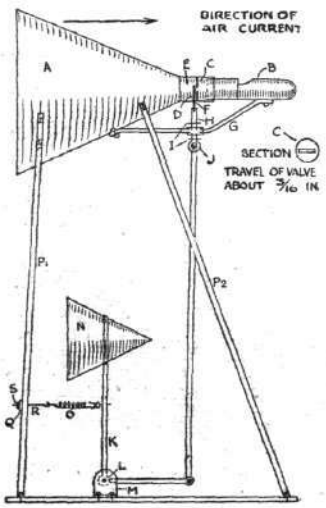
[2] I enclose a design for safety speed alarm. The action is as follows :—

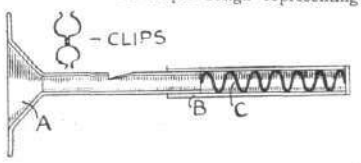


A, funnel for air blast for whistle; B, whistle such as used in conjunction with exhaust on motor cycles; C, diaphragm, also shown in section; D, flat valve working over diaphragm C; E, tube connecting whistle with funnel, having a saw-cut at F, through which valve D works; G, support carrying bearing through which rod H works; I, pins to limit travel of valve D; J, hinge joint; K, bell-crank-lever pivoted at L; M, bearings to pivot, L, one being on either side; N, funnel-shaped cup; O, brass spiral spring; P^1, P^2, supports, two on either side; Q, cross-piece connecting two front supports; R, threaded steel wire; S, nut for altering tension of spring, O.

The spring, O, having been set to a pre-determined tension, suppose the aeroplane to exceed the safety speed. The funnel, N, is driven backwards by the force of the air, and a downward movement is imparted to the rod, H, by the bell-crank-lever, K, this moving the valve, D, and admitting air to the whistle, B.

Birmingham. W. B. SHERWOOD.

[3] I submit the enclosed simple design representing my idea of a suitable speed alarm for aeroplanes. The sketch represents a whistle sliding in a tube. The whistle has a funnel-shaped opening, A, surrounded by a flange. The tube, B, in which it slides, contains a spring, C. The effective length of the whistle and the tube determines the note of the sound produced, which would be automatically regulated by the air-pressure on the flange.



H. D. HODGSON.

Letters, accompanied by descriptions and drawings for the Speed Alarm Competition, are also acknowledged from R. S. Gilmour, James Cowen, R. S. W. Glynn, W. Yeatman, R. Burga, W. Forest Leach, H. Ewen, E. Montoya, F. Wearden, M. H. Vernham, F. H. Norris, L. E. Eeman, J. W. Fox, William Dunbar, H. Manning, R. H. Barnwell, D. C. Young, Truanesco, T. H. Wintringham, and H. Best.

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ROUND-ABOUT FRENCH NOTES.

By OISEAU.

I SEE that the British War Office has again made a wavering move towards the establishment of a military aeroplane corps. Surely the great use of the aeroplane in warfare has been sufficiently demonstrated in the cross-country voyages of the past few months to justify the expenditure of a much larger sum on the foundation of a military school of aviation than is at present set aside for such a purpose. I understand the British officer is expected to provide his own aeroplane and learn to fly at his own expense, for the somewhat doubtful pleasure of being permitted to practise on a ground already open to the public, and to house his machine in a hangar provided by the Government. He spends his money and risks his life, and the country reaps the benefit, a glowing obituary notice being his sole reward.

It is instructive to compare this state of affairs with that existing in France. At the end of 1909 the Ministry of War purchased five machines—one of them a monoplane—and at once commenced to train suitable officers. Since that date the number of machines has been increased to twenty-five, whilst twenty-three officers, among them a General, hold the brevet of pilot of the Aero Club de France. Nearly double that number are in course of training at one or other of the great flying grounds. Among the types already purchased or on order are the H. Farman, M. Farman, Sommer, Wright and Breguet biplanes, and the Antoinette, Blériot, Koechlin and Nieuport monoplanes. Certain of the officer aviators, such as Féquant, Gronier and Cammerman, are easily in the first rank of flying men.

They are free to fly where they will. No restrictions within reason are placed on the experimental alterations they may make on their machines (as for instance the stabilising tail fitted by Captain Etavé to his Wright biplane, and the many new details in the tail of Cammerman's Farman), and every assistance is rendered that money and experience make possible. The results are obvious to the world. Is it not time the English War Department slightly accelerated its stately progress through the ages?

A few days ago I found a copy of an American automobile journal published in Paris a little time back and now defunct. The issue was dated December, 1908, and contained an article on aviation, in which reference was made to M. Blériot's first cross-country flight of a few days before. The following extract, in the light of the Circuit de l'Est, is rather amusing:—

"But the next day the monoplane proved true to itself, and once more demonstrated the danger of the type by coming heavily to the ground and smashing itself out of all recognition. M. Blériot is now about to commence experiments with a cellular machine, for which we may all be thankful. Had he continued much longer with the fickle monoplane, he would certainly have killed himself some day, and the cause of aviation would have had to mourn the loss of one of its most able exponents."

And yet, despite this cheering forecast, M. Blériot still lives!

An uncurbed imagination is often the source of strange statements. It is new to learn from the aviation expert of one of the leading London papers that Issy les Moulineaux is dangerous as a flying ground owing to the close proximity of the Eiffel Tower and the river Seine. The former still oscillates gently three miles away, whilst the river flows by at least a quarter of a mile from the ground. A Fleet Street garret or a flat at Putney is not always the most appropriate centre for the topographical description of other countries. The real reason of Issy's unsuitability for aviation purposes is to be found in the wind currents set up by the presence of the two large hangars for dirigible balloons built near the river bank, and by the general cup-like formation of the ground. There is hardly a day without some powerful undercurrent of wind disturbing the otherwise calm atmosphere. It is certainly no place for the incipient gambols of the budding aviator unless his purse is long and his patience infinite, for the destruction of machines is a daily incident. Another danger is caused by the indiscriminate granting by the police of admission passes to all who care to frame a feeble lie and ask politely. One often finds children of five or six with cards beautifully engrossed by the commissary of police giving them the freedom of the place. With the deadly ingenuity of the entirely ignorant, the crowd invariably happens to be at the point where some aviation pupil finds it necessary to make a hurried and inelegant descent. His efforts to avoid the people can only end in a wrecked aeroplane and a distinctly frayed temper. Partly for these reasons most of the big schools have left Issy and gone to one of the larger clearer spaces further from Paris, where there are neither crowds nor buildings.

The opinion of French aviators, as far as one can judge, is not favourable towards the Milanese offer of a prize for crossing the Alps from Brigue by the Col du Simplon to Milan. The difficulties and the dangers of the flight are very great. Both the pilot and his machine will be adversely affected by the intense cold, which will be further intensified by the great height at which it will be necessary to fly. At the Col du Simplon it will be necessary to rise at the very least to 2,100 metres. In case of breakdown the chances are greatly against a safe descent. However, as the entries are by invitation, only the most capable of aerial pilots will be allowed to take part in the contest.

I hear that the Comte Jacques de Lesseps, Duray, Chavez, and Cattaneo are at present examining the route. Paulhan has also been invited to fly across, but I think his participation doubtful.

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MORE PILOTE-AVIATEURS.

SINCE the last list of *pilote-aviateur* certificates was published, 30 more names have been added, and are given below. It will be noticed that another lady has qualified, in Mme. Niel, who has been practising on a Koechlin monoplane at Mourmelon for some time:—

151. Somers-Somerset (Blériot)
152. Matyevitch - Matzevitch (Blériot)
153. Lieut. Saunier (Wright)
154. Lieut. Lucca (Wright)
155. Mme. Marthe Niel (Koechlin)
156. Lieut. De Caumont (Sommer)
157. Louis Mouthier (Blériot)
158. Lieut. Devaux (H. Farman)
159. Geo. Chemet (Voisin)
160. Jean Chassagne (Blériot)
161. Albert Perin (H. Farman)
162. Xavier Martin (Blériot)
163. Henri Chailliey (Voisin)
164. Pierre Picard (Savary biplane)
165. Capt. Hugoni (H. Farman)
166. Paul Molla (Sommer)
167. Emile Train (Train monoplane)
168. Michel Mahieu (H. Farman)
169. Prier (Blériot)
170. Leon Letort (Blériot)
171. Frank Barra (M. Farman)
172. Henri Molla (Sommer)
173. Capt. Balensi (H. Farman)
174. Lieut. Vuillerme (H. Farman)
175. Lieut. Byasson (M. Farman)
176. Eugene Lesire (Voisin)
177. Rene Simon (Blériot)
178. Capt. Matziewich (H. Farman)
179. Leon Parisot (H. Farman)
180. Caudron (Caudron biplane)

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

To the Members of the Royal Aero Club.

DEAR SIR,

Memorial to the late Hon. C. S. Rolls.

At a joint meeting of the representatives of the **Royal Automobile Club** and the **Royal Aero Club**, the question was considered as to what steps should be taken for the erection of a suitable memorial in memory of the late Hon. C. S. Rolls, and the following resolution was unanimously passed:—

"That the Royal Automobile Club and the Royal Aero Club be recommended to erect suitable memorials in memory of the late Hon. Charles Stuart Rolls at their respective Clubs, leaving to the general public and other bodies the carrying out of any other memorial they may decide to promote."

It was decided that the Memorial should take the form of a bas-relief plaque, and that any surplus over and above the cost of the Memorial should be devoted to the establishment of an **Aeronautical Library** at the **Royal Aero Club**, to be called the **"Rolls Memorial Library."**

By limiting individual subscriptions to the sum of 10s., the Committees of both Clubs hope to receive donations from every member, who, they feel sure, will be ready and anxious to thereby demonstrate how universal is the feeling of regret at the loss of their late fellow member and of appreciation for his work.

Donations should be forwarded to the Secretary of the Royal Automobile Club, 119, Piccadilly, London, W., or the Secretary, Royal Aero Club, 166, Piccadilly, London, W., and their receipt will be acknowledged weekly in this column.

Yours faithfully,

HAROLD E. PERRIN, Secretary.

166, Piccadilly, London, W.,
August 27th, 1910.

Flying at Leopardstown.

Under the auspices of the Irish Aero Club, exhibition flights will be given by Capt. Bertram Dickson, J. Armstrong Drexel, and Cecil Grace at the Leopardstown Racecourse on Monday and Tuesday next, August 29th and 30th.

Aero Club de France.

The Aero Club de France has forwarded to the Royal Aero Club a silver-gilt medal to commemorate Mr. Grahame-White's magnificent attempt for the *Daily Mail* Prize on May 27th and 28th, 1910, and has requested this Club to present the medal to Mr. Grahame-White.

Absence of the Chairman at the Cape.

Mr. Roger W. Wallace, K.C., the Chairman of the Royal Aero Club, left London on Saturday for the Cape. It is understood that he intends to be away for a couple of months.

Baron de Forest £4,000 Prize.

Under the Rules of the International Aeronautical Federation.

Baron de Forest has offered through the Royal Aero Club of the United Kingdom a prize of £4,000, to be competed for under the following conditions:—

1. The winner to be the aviator who, from a point fixed upon by himself, and approved by the Royal Aero Club, flies the longest distance from England to the Continent, the distance to be measured from the starting point to the point of descent.
2. No part of the machine shall touch land or water during the flight.
3. The competition to be open from January 1st, 1910, until December 31st, 1910.
4. The flight must be accomplished by means of a machine of the type designated "heavier-than-air."
5. The complete machine, *i.e.*, the motor and all its parts, the planes, propellers, and all other parts thereof, must have been entirely constructed within the confines of the British Empire, but this provision shall not be held to apply to raw material.
6. The entrant, who must be the person operating the machine, must be a British subject, and domiciled in Great Britain or the Colonies or dependencies thereof for a period of at least two years prior to January 1st, 1910.
7. The flight must be commenced in the presence of official observers appointed by the Royal Aero Club.
8. Formal notice of entry must be sent to the Secretary, Royal Aero Club, 166, Piccadilly, W., not less than one month before the proposed flight, and the entrant must comply with all the regulations as to notices, observations, and other details issued from time to time by the Royal Aero Club.
9. In every case, notification of the first attempt to be made, under these conditions, must reach the Royal Aero Club, 166, Piccadilly, W., not less than forty-eight hours prior to such attempt, and in the case of all subsequent attempts, not less than twenty-four hours' notification must be given.
10. The entrant must supply satisfactory evidence of previous flights before making any attempt under these conditions.
11. The competitor must supply satisfactory evidence of the exact point of descent, signed by two witnesses, whose signatures must be attested.
12. In accordance with the rules of the International Aeronautical Federation, the entrant must be a member of, or obtain a permit from, the Royal Aero Club.
13. Should any questions arise at any time after the date of entry as to whether a competitor has properly fulfilled the above conditions, or should any other question arise in relation to them, the decision of the Committee of the Royal Aero Club shall be final and without appeal.
14. Each competitor agrees to waive all claim for injury either to himself or his apparatus, and agrees to assume all liabilities for damage to third parties or their property, and to indemnify the Royal Aero Club against any such claims.

HAROLD E. PERRIN,
166, Piccadilly. Secretary.

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PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.)

Manchester Aero Club (9, ALBERT SQUARE, MANCHESTER).

THE activity which has been displayed by the committee of the Manchester Aero Club during the last few months, and which has been accelerated during the last few weeks, continues to show its results.

By virtue of its affiliation with the Royal Aero Club of the U.K., the Manchester Aero Club will in future be represented on the General Committee of the R.Ae.C. by a number of its members, who, in their turn, are eligible as delegates of the International Aeronautical Federation, which controls aviation all over the world.

All members of the Manchester Aero Club are now *ipso facto* associates of the Royal Aero Club of the U.K., and are entitled to most of the advantages enjoyed by the members of the Royal Aero Club of the U.K.

Members joining now will not be called upon to pay any subscription for the remaining two months of the present year, and anybody interested in the local club should put himself into communication with the secretarial offices of the club, at 9, Albert Square.

Sheffield & District Ae.C. (22, MOUNT PLEASANT RD., SHARROW)

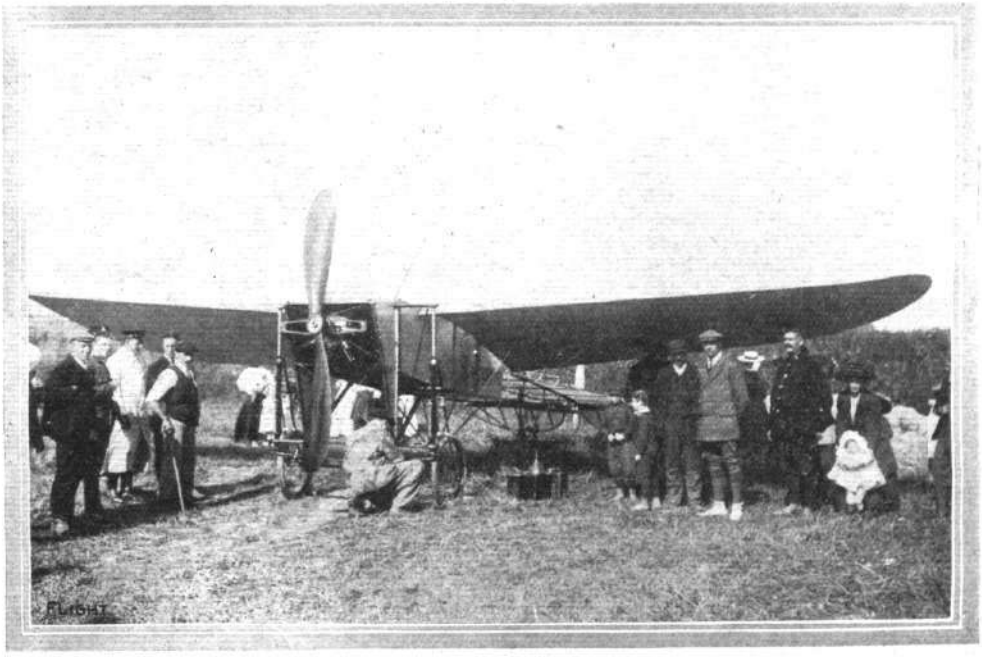
A GENERAL meeting was held on the 10th inst. at the new club room, at the Builder's Exchange, kindly placed at the disposal of the club by Mr. Robert Taylor, being used for the first time.

There was a large attendance, and among those present were Mr. Patrick Alexander, Prof. Boulden, and several other prominent gentlemen connected with the city. Mr. A. V. Kavanagh presided, and calling upon Mr. Alexander. The latter in the course of his remarks suggested a scheme for the purpose of placing the Sheffield Aero Club before the notice of the British Association when visiting Sheffield shortly. Prof. Boulden also expressed his opinion regarding Mr. Alexander's suggestion, and the matter was left in the hands of the committee. A large number of new members joined the club, and the roll of founder members is now nearly completed. In consequence, only a few more members can be accepted at the present subscription, which will shortly be considerably raised. Those desirous of joining should apply to the Secretary without further delay.

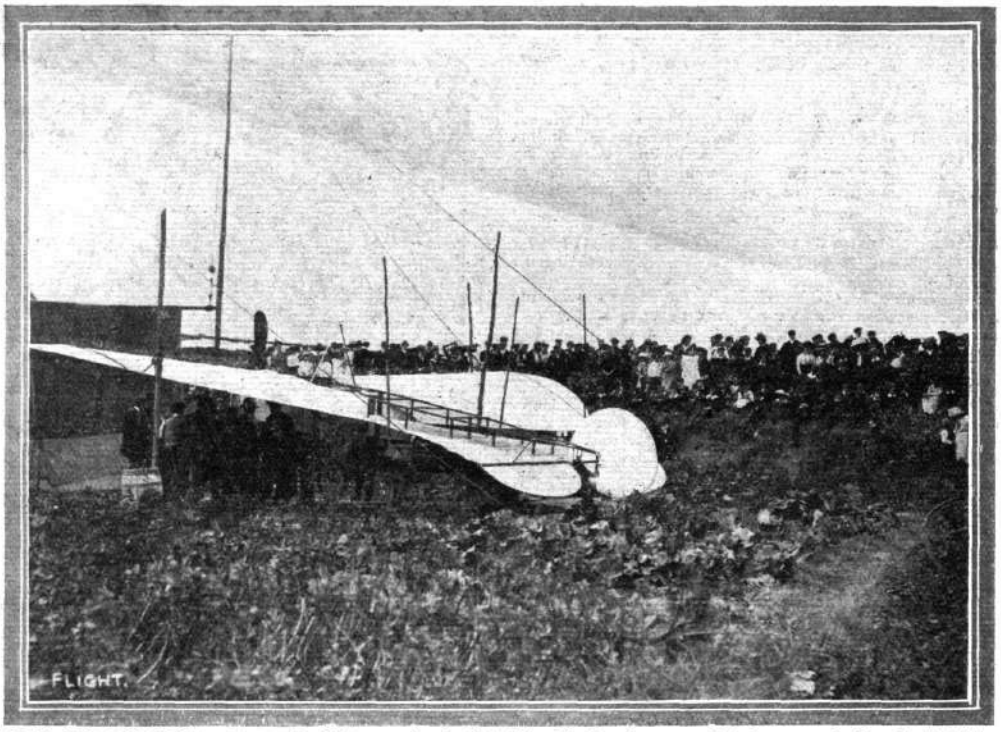
"PARIS TO LONDON" BY AEROPLANE.

WE were just able to give details in our last issue regarding Mr. John B. Moisant's flight from Paris to his landing on British soil at Tilmanstone, near Walmer. It is a little curious that during the first three stages, up to his landing, everything went off without a hitch, but as soon as the aviator landed in Great Britain, his troubles began in the shape of wind and rain. All day on Wednesday he remained at Tilmanstone waiting for the weather to moderate, and eventually he decided to postpone his departure till the following morning. The sun was shining brilliantly on Thursday morning, when shortly before 5 o'clock the machine was wheeled out, and in a few minutes, with its pilot and his trustful mechanic Fileux on board, it was in the air, and heading for London. Canterbury was soon passed, and good progress made until Sittingbourne was sighted, when a broken valve-rod necessitated a stop after a flight of 1 hour 5 mins. A local mechanic effected a repair, and at half past nine the machine once more rose to continue its journey to the Metropolis. Only a short distance had been covered, however, when the engine stopped again, and Mr. Moisant was forced to make a sudden descent at Upchurch, near Rainham, 7 mins. after leaving Sittingbourne. About the best spot he could reach, under the circumstances, was an allotment garden, and in landing there the machine sank into the soft soil, with the result that the propeller was done for and the chassis damaged. Mr. Moisant sought the assistance of Messrs. Short Bros., whilst Capt. Hordern, R.E., of Chatham, rendered valuable aid, repairs being effected very quickly, and soon all was in readiness with the exception of the propeller. A new one was wired for, but this did not arrive from Paris until Friday morning. It was soon fitted, but then the strong wind rendered it advisable to postpone the start. On Saturday morning Moisant made another trial, but could only advance by between two and three miles, when the wind over the hills proved too much for him, and he landed at Gillingham. There he was forced to remain during Sunday. He was early astir on Monday, and was in the air at 4.29, with the intention of going to the Crystal Palace. He, however, found the tussle with the wind a very fierce one, and at the end of 58 mins. he had been driven considerably off his course. As his petrol supply was then getting rather low he determined to descend, and landed at Wrotham, a distance of about 19 miles from Rainham. The petrol tank was replenished, and another start made after a stop of half an hour.

PARIS TO LONDON.—Mr. John B. Moisant and his mechanician, Fileux, on the Blériot two-seater with which he made his remarkable flight from Paris across the Channel last week.



PARIS TO LONDON.—Mr. John B. Moisant's Blériot at Tilmanstone, where he alighted after crossing the Channel with his mechanician Fileux.



PARIS TO LONDON.—Moisant's Blériot in the brickfield at Upchurch, near Rainham, ready for the finishing stage to London.

No less than 27 minutes were expended in covering four miles, the aviator finding it impossible to get his machine to rise sufficiently to clear the Otford Hills. He therefore deemed it prudent once more to descend, this time at Kemsing, a little place not far from Sevenoaks. A sudden landing damaged the machine, but Moisant, in his characteristic optimistic manner, set to work at once to put matters right, and announced his determination of completing the journey to London, and that only by aeroplane.

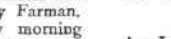
The determination of the man is exemplified by the undertaking of this journey, although it is the first time Mr. Moisant has been in England, and in fact he declares that until he flew to Amiens he was entirely ignorant of the country north of Paris. He is an American architect of Spanish descent, who came to Europe some months ago to study aviation. He went to Issy, and there experimented with a couple of machines of his own construction, and eventually decided that it would expedite his own experiments if he learnt to fly a well-known machine first. He therefore obtained a Blériot, and soon proved remarkably proficient, obtaining his certificate quite easily. His first noteworthy flight was that from Etampes to Issy on the first day of the Circuit de l'Est. During this trip, as throughout his flight from Paris to England, Mr. Moisant has always been accompanied by his mechanic, and during the last stages from Rainham he has carried an extra passenger in the shape of a little kitten. Mr. Moisant has steered throughout his trip by the aid of a compass floating in glycerine, and he asserts that he has found it perfectly satisfactory.

In referring to the two machines which he has himself designed and had constructed, Mr. Moisant gives some interesting details regarding them. The first had a bird-shaped body, and on its first trial at Issy last year shot up about 90 ft. in the air, but came down again as suddenly. This machine was followed by one which was a cross between a biplane and a monoplane, and its chief peculiarity was that there was not a wire in it. The planes were constructed on the suspension bridge principle, and Mr. Moisant declares they were so strong that a weight of 500 lbs. could be hung at one end without them bending. As soon as Mr. Moisant feels proficient with his Blériot he proposes to recommence experimenting with this machine, which he says can attain a speed of 120 kiloms. an hour.

RACE FROM FRANKFORT TO MANNHEIM.

ALTHOUGH the officials in some parts of Germany put every possible obstacle in the way of cross-country flyers, that does not apply to all parts. Wednesday of last week saw the start of a race from Frankfort-on-Main to Mannheim for a prize of £2,000. Thelen, on a Wright machine, accompanied by von Gorrissen, was the first away, but he had to land near Mainz owing to a cracked cylinder. Weinczierz started in the evening on his Antoinette and stopped at Mainz, as also did Jeannin, on a Henry Farman. Flying was impossible on Thursday, but on Friday morning Jeannin successfully reached Mannheim. Von Gorrissen attempted to fly from Frankfort on his Euler machine, but came to grief, as also did Plochmann, with his Grade. As soon as he landed Jeannin had his machine dismantled and sent back to Frankfort by train, and on Sunday he covered the complete journey again, without a stop, in an hour and three quarters.

The full course was also covered by Lochner and Lindpaintner. Jeannin secured the first prize of 25,000 marks (£1,250) and Prince Albert of Schleswig-Holstein's prize. Lochner took second prize of 10,000 marks (£500), and Lindpaintner the third prize of 5,000 marks (£250) and the Grand Duke of Baden's prize for a fine performance under unfavourable circumstances. Thelen secured the Grand Duke of Hesse's prize for a passenger flight to Mainz, and Wienczierz was also awarded a prize for his trip to Mainz.



An International Cross-Country Race for 1911.

FOR a prize of £8,000 the Paris *Journal* proposes to organise for next summer a great international cross-country race, four capitals, viz., Paris, Berlin, Brussels and London being included in the course. The idea, no doubt, has been suggested by the Paris-Berlin race, which did so much to aid the development of motor cars.

CIRCUIT DE L'EST.

M. Leblanc in the pilot's seat of his Blériot on which he won the first place in the Circuit de l'Est last week.

WE have already announced that Leblanc was the winner of the great cross-country race organised by *Le Matin* for a prize of £4,000, but in our last issue exigencies of time and space precluded our then placing on record the complete results. For the last stage there were seven starters from Amiens, Leblanc, in view of his position as leader in the competition, being given pride of place, and starting first at three minutes past five. Four minutes later Lieut. Letheux started up but failed to get away; then at 5.9 Aubrun was on his way to Issy. He was followed at 5.15 by Legagneux, and at 5.20 by Lieut. Cammerman. Lieuts. Aquaviva and Bielovucic also attempted to start, but could not get up. Another starter was Moisant, but to everyone's astonishment he veered round to the north on his way, as it afterwards transpired, to Calais and England on his now world famous flight.

At Issy an even more remarkable scene was witnessed than at the start a week previous. From the earliest hours of the morning the crowd had been accumulating, and by the time the aviators were due to arrive there must have been well on to a quarter of a million sightseers on the ground. In the centre was General Brun, surrounded by a large group of high military officers and Government officials waiting to extend a full and hearty welcome to the flyers. About half-past six the whirr of a motor was heard, and a shout went up that they had arrived, but as the faint speck in the sky drew nearer it was seen to be a biplane, and on landing it proved to be Lieut. Lucca on a Wright machine, he having come over from Satory in order to join in greeting the contestants. He had just been congratulated by General Brun when another great shout arose, this time heralding the appearance of Leblanc. At 6.50 he had landed safely, and thus won the great race. As soon as he got out of his machine he was shouldered by the crowd and carried to the Grand Stand, where he was complimented by General Brun. Thirteen minutes after his arrival Aubrun appeared and was accorded a like honour. Lieut. Cammerman did not arrive until half-past nine, as he had been compelled to make a stop at Clermont-sur-Oise for petrol. Legagneux took nearly five and three-quarter hours for the journey, as he made several stops and detours on the way. From the accompanying table it will be seen that, taking the elapsed time for the various stages, Leblanc's average speed over the whole course was 66·99 k.p.h. The results are tabulated below. In addition to the big prize Leblanc also secured 27,000 francs in daily prizes, Aubrun got 13,000 francs, Legagneux 27,000 francs, Weymann 10,000 francs, Lindpaintner 4,500 francs, Mamet 3,000 francs, Paul de Lesseps 2,000 francs, and Bregi 1,000 francs.

THE RESULTS.

Paris-Troyes (145 kilomS.), Troyes-Nancy (165 kilomS.), Nancy-Mezieres (160 kilomS.), Mezieres-Douai (135 kilomS.), Douai-Amiens (80 kilomS.), Amiens-Paris (120 kilomS.).

Complete Course (805 kilomS.).

	h.	m.	s.
1. Leblanc, Blériot monoplane (Gnome motor) ...	12	1	1
Average speed, 66·990 k.p.h.			
2. Aubrun, Blériot monoplane (Gnome motor) ...	13	31	9

Paris-Troyes (145 kilomS.), Troyes-Nancy (165 kilomS.), Douai-Amiens (80 kilomS.), Amiens-Paris (120 kilomS.).

Four Stages (total 510 kilomS.).

3. Legagneux, H. Farman biplane (Gnome motor) ...	17	21	13⅘

Paris-Troyes (*One Stage*, 135 kilomS.).

4. Lindpaintner, Sommer biplane (Gnome motor) ...	2	0	23
5. Weymann, H. Farman biplane (Gnome motor) ...	4	17	21
6. Mamet, Blériot monoplane (Gnome motor) ...	5	8	9

Results of Each Stage.

First Stage (Paris-Troyes, 140 kilomS.).

	h.	m.	s.		h.	m.	s.
1. Leblanc ...	1	32	20	4. Legagneux ...	3	59	35
2. Aubrun.. ...	1	37	25	5. Weymann ...	4	56	49
3. Lindpaintner ...	2	25	25	6. Mamet	5	8	19

Second Stage (Troyes-Nancy, 165 kilomS.).

1. Leblanc ...	2	19	49	3. Legagneux ...	5	31	26
2. Aubrun... ...	2	27	50				

Third Stage (Nancy-Mezieres, 160 kilomS.).

1. Leblanc ...	2	5	20	2. Aubrun... ...	3	42	28

Fourth Stage (Mezieres-Douai, 139 kilomS.).

1. Aubrun... ...	2	19	4	2. Leblanc ...	3	3	18

Fifth Stage (Douai-Amiens, 80 kilomS.).

1. Leblanc ...	1	7	31	3. Legagneux ...	1	30	32
2. Aubrun... ...	1	24	24				

Sixth Stage (Amiens-Paris, 120 kilomS.).

1. Leblanc ...	1	47	2	3. Legagneux ...	5	43	0
2. Aubrun... ...	1	54	55				

M. Aubrun, who, on a Blériot, obtained second prize in the Circuit de l'Est, he being the only aviator, besides the winner, Leblanc, to complete the entire circuit.

BRITISH NOTES OF THE WEEK.

Aeroplanes at the Manœuvres.

IT is authoritatively stated that at the Army manœuvres, which will shortly commence on Salisbury Plain, the troops will be accompanied in the field both by dirigible balloons and aeroplanes. Not only so, but it is further reported that tests will be made with various means of defence against such craft.

Drexel's Height Record.

As a result of the examination by the Kew authorities of the barograph carried by Mr. Drexel during his altitude record, the height is slightly reduced, owing to an error in reading. The height is now recorded as 6,621 ft., which is still the world's record.

Aerodrome at Huntingdon.

WE are given to understand that the Earl of Sandwich and other owners of Portholme Meadow, the old racecourse—an island of some 260 acres, perfectly flat—have now definitely offered it to the town of Huntingdon for a term of years for aviation purposes, and that a committee already appointed for and on behalf of the town, for whom Mr. J. Percy Maule, the Town Clerk, acts as secretary, are prepared to open up negotiations with private individuals or a company with a view to sub-leasing.

Lanark Prize for Charity.

As the prize of £250 offered by Messrs. Pettigrew and Stephens, Ltd., for a flight round the University could not be competed for on the appointed day owing to windy weather, the donors requested the Lord Provost of Glasgow to distribute the money. As a result, the Royal Infirmary, Western Infirmary, East Park Home for Infirm Children, and Bellefield Sanatorium each receive £50, and the Victoria Infirmary and the Smyllum Hospital £25 each.

Dublin Flying Meeting.

EVERYTHING points to the two days' flying exhibition to be held on the Leopardstown racecourse, near Dublin, being a great success. Arrangements have been made with Armstrong Drexel, Cecil Grace, and Capt. Dickson, and given fine weather, each of these aviators should put up some fine work between them. The three sheds have been erected in the grand stand enclosure, so that those who are in that part may examine the machines at close range.

Wedding Bells at Blackpool.

VERY quietly on Saturday afternoon, Mr. A. V. Roe was married at the South Shore Parish Church, Blackpool, to Miss Mildred Kirk, a Derbyshire lady.

British Aviators for America.

AMONG the passengers on the White Star Liner "Cymric," which sailed from Liverpool on Tuesday last, were Mr. Claude Grahame-White and Mr. A. V. Roe, both of whom will be at Harvard for the flying meeting. Mr. Grahame-White is taking both a Farman and a Blériot, while Mr. Roe will use a triplane which has been purchased by the Harvard Aeronautical Society, and was shipped a fortnight ago.

Newcomers at Filey.

ANOTHER monoplane has taken up its quarters at Filey, and is to be tested on the beach shortly. This has been built by two Irish aviators, Messrs. Hutton and Wilson, and is fitted with a 35-h.p. 2-cyl. Alvaston engine.

Last Saturday week Mr. House had an unlucky accident. He had made several short flights along the beach when the machine suddenly turned turtle, smashing one of the wings and the propeller. Mr. House was pinned beneath the machine, but on it being lifted he emerged unhurt.

Advisory Committee on Aeronautics Report.

JUST as we go to press there is published as a Blue-Book the first annual report of the Government Advisory Committee on Aeronautics. It is a bulky volume of 190 pages, and includes a number of diagrams, &c., to illustrate the reports of the research work which has been taken in hand during the past twelve months. We hope to deal with the report adequately in a future issue.

Rapid Aeroplane Construction.

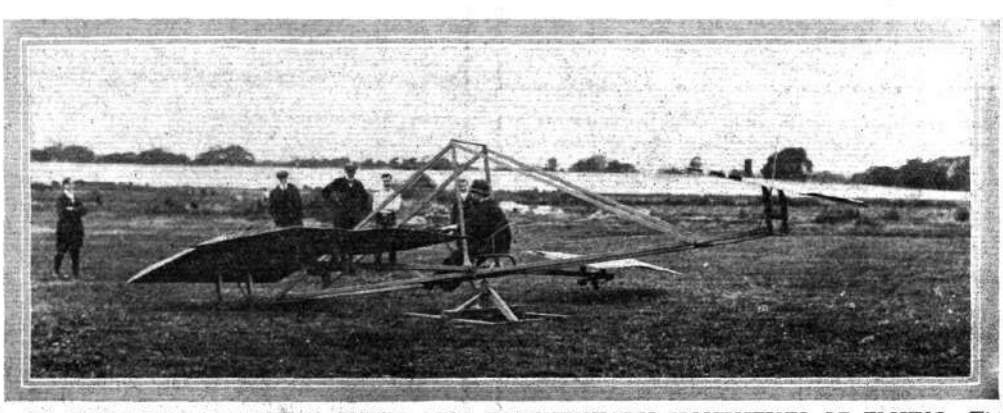
THE accident to Mr. Roe's machines, when they were burnt on the railway during transit to Blackpool, will be fresh in the minds of our readers. No time was lost in starting new machines, and two other complete aeroplanes have, we learn, already been turned out. One of these was being used at Blackpool, and the other was sent to America on Saturday, August 13th. This speaks well for the equipment of A. V. Roe and Co. for dealing with urgent orders, a fact to make a note of, as the firm undertake work outside building their own particular machines.

"All the World's Airships."

IN order to prevent any misunderstanding, we are asked to announce that the statement that Mr. Fred T. Jane's "All the World's Airships" will in future be sold at 42*s*., only refers to last year's edition, of which only a few copies are left. The forthcoming (1910) edition will be sold at the usual price of 21*s*.

Aeronautical Classics No. 3.

THE third volume of the Aeronautical Classics, (1*s*.) which deals with the art of flying, by Thomas Walker, has made its appearance and should find its way immediately on to the book-shelves of all those who profess to follow aviation with interest. The Aeronautical Society of Great Britain are doing a thoroughly useful work in republishing the writings of very early pioneers, and the fact that they have thus placed them within the reach of all, deserves the widest support. Thomas Walker, the subject of the present volume, was an interesting man and what is known of him has been admirably expressed in a well written foreword to this treatise of his upon "The Art of Flying." His real vocation was that of portrait painter, but he would seem to have had a very good idea of the fundamental principles of the flying art as well, considering the early date of his writings, the first edition of which appeared in 1810. One of the most interesting passages in the treatise is that which describes a successful experiment made with a ballasted model glider such as, in principle, so many of our younger readers are now making to-day.



A MACHINE FOR TEACHING PUPILS THE RUDIMENTARY MOVEMENTS OF FLYING.—This oscillating structure is the invention of Mr. Eardley D. Billing, and is available at Brooklands Aerodrome for trial by flying aspirants.

CONTINENTAL FLIGHT MEETINGS.

Flying Week at Nantes.

THE eight flyers who put in an appearance at Nantes last week gave the great crowds who flocked to the aerodrome a very fair amount of flying, with the exception that on the 18th the continuous rain kept all the machines under cover. We gave details regarding the performances on the two opening days in our last issue, but the third day, the 16th inst., saw the longest flying, Renaux, on his Maurice Farman machine, being up for 1 hr. 40 mins., while Paillette, on his Sommer, made a flight which was only two minutes less in duration. The other essays were a quarter of an hour by Morane, 7 mins. by Van den Born, and 3 mins. by Niel on the Nieuport monoplane. In the biplane speed trials, Renaux was first, covering the 10 kiloms. in 6 mins. 44⅘ secs., Van den Born being second with 7 mins. 20⅕ secs. On the following day Thomas was out again on the Antoinette and flew for nearly 26 minutes, whilst Renaux contented himself with five minutes less. In the speed trials for monoplanes, Morane covered the 10 kiloms. in 5 mins. 9 secs. Simon, also on a Blériot, took 5 mins. 44⅕ secs., and Thomas 7 mins. 8 secs. The outstanding feature of the programme on the 18th inst. was the cross-country race to Blain and back, but as a matter of fact only Morane completed the distance, he taking 53 mins. 31⅘ secs. for the 80 kiloms. Martinet, who recently won the Angers to Saumur race, started, but he was only in the air for a little more than 8 mins. Simon and Renaux also made flights of about 20 mins. each. Friday was a blank day, owing to the wind and rain, but this was more or less compensated for on Saturday. In the speed contest over 10 kiloms. Morane was first with 5 mins. 6⅘ secs., Simon was second, 5 mins. 26⅘ secs., Renaux third. The longest flight was by Martinet, who was up for over 35 mins., while Simon made a trip of 32 mins. In the passenger-carrying competition Van den Born carried two for 7 mins. 50 secs., and won first prize, while Renaux, Van den Born and Cheuret each carried one companion for more than 7 mins. Sunday was a bad day, by reason of the rain, but six of the flyers were out, including Morane, Simon, Bathiat, Paillette, Renaux and Cheuret, and the first-named took the prize for height with 1,000 metres, and the longest flight prize with 21 mins. 2⅕ secs.

Meeting at Geneva.

THERE was very little flying on the second day of the Geneva meeting, Amerigo heading the list with a 15-minute trip, while Taddeoli and Faillonbaz, both on Blériots, and Audemars, on his Demoiselle, were each out for about five minutes or so. On the following day, Wednesday 17th, these were again the only flyers out. Amerigo added 45 mins. 18 secs. to his totalisation record, Taddeoli put on 20 mins., Faillonbaz 12 mins., and Audemars 8 mins. The highest recorded flight was Amerigo's 180 metres. The next day the flying was restricted to 20 mins. each by the two Blériot pilots and 2 mins. by Audemars. Friday saw two good flights by Taddeoli and Amerigo, while on Saturday last, the closing day, Amerigo accomplished the longest flight of 1h. 12m. 25s. He thus won the totalisation prize. Dufaux was in the air for a quarter of an hour, and Taddeoli and Faillonbaz for short flights. The speed prize was won by Audemars.

Croix d'Hins Meeting Proclaimed.

FOLLOWING upon a protest by the organisers of the international meeting at Bordeaux, the Commission Sportive Aeronautique have announced that anyone taking part in the Croix d'Hins meeting, arranged to be held next week, will be disqualified.

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FOREIGN AVIATION NEWS.

Municipal Encouragement in France.

M. DAUSSET, who is reporter on the Budget to the Paris Municipal Council, has intimated that it is his intention, when drawing up his next Budget, to include a sum of £4,000 to be expended in prizes for a long cross-country race.

Military Developments in France.

THE recent successes of the military aviators in long-distance flights, and the result of the Circuit de l'Est, has caused a wave of enthusiasm to set in among French military officials. General Brun, the Minister of War, makes a special point of attending as many functions in connection with flying as possible, and has given his support to a statement by M. Clementel, reporter to the Budget, that the War Office will give orders at once for 50 aeroplanes, and will establish training grounds all over the country. It is also proposed to develop aviation to such an extent as to become a fourth branch of the service in support of the infantry, cavalry and artillery.

French Naval Experts and Aeroplanes.

AT the same time the French Navy is also giving serious consideration to the question, and the Minister of the Navy, Admiral Boué de Lapeyrève, has announced that he will devote all the funds at his command to the purchase of aeroplanes. He has stated that each of the Naval centres at Cherbourg, Brest, Toulon, and Bizerta must be equipped with a dirigible and several aeroplanes, and he has already given orders for a station to be prepared at Mourillon, by Toulon. He also proposes to organise a competition with the object of obtaining the best type of aeroplane for marine purposes.

Poillot Gains his Certificate.

AFTER flying for 30 minutes at a height of 200 metres over the country round Chartres on Sunday week, Poillot, the new Savary pilot, suddenly found his magneto had gone wrong. He, however, landed safely after a long gliding flight, and on returning to the aerodrome was congratulated on his performance. On the previous Thursday he had successfully made the three necessary tests for obtaining his Ae.C.F. pilot's certificate.

L.N.A. Competitions.

WITH the object of rendering aviation more safe, the Ligue Nationale Aerienne have decided to organise three competitions. One will be for protective clothing for aviators and their passengers, the second will be for appliances for reducing the shock of sudden landing, and the third will be for a system of parachutes which shall open out in the case of the machine dropping from a great height.

A New Tellier School.

IN order that their clients may have ample and convenient opportunity to practise with their machines, the Société des Chantiers Tellier have opened a new school at Etampes. There pupils will find a vast plateau over which light winds prevail, and when they become proficient, cross-country flights to the old school at Draveil, near Juvisy, can be indulged in. The sheds are being erected along the Dourdan road about 3 kiloms. from Etampes. One of the first pupils is the Prince of Nissole.

A New Biplane at Issy.

WHILE some manœuvres were being carried out at Issy on the 12th inst., before the Touaregs Chiefs now visiting France, M. F. Parent obtained special permission to make a flight on his Poulain-Orange biplane during prohibited hours. Having made a short trial spin, he then successfully passed the first test for his aviator's certificate. The performance was a revelation to the chiefs, who were amazed at the sight. He made the remaining tests on Saturday to qualify for his full certificate.

The main planes of this machine have a span of 11·5 metres, and the lifting surfaces of the machine total to 52 sq. metres. It is fitted with an 80-h.p. Labor motor.

A Princess Learning to Fly.

IT is reported from Chartres that at the flying school there Princess Dolgorowki is being taught to fly a Blériot monoplane by the aviator, Delatang, and on Monday she succeeded in making several short flights in a straight line.

Aubrun at Mortagne.

RELEASED from the strenuous work of the Circuit de l'Est, Aubrun gave a series of exhibition flights at Mortagne-sur-Huisne on Sunday and Monday last. On Sunday he flew over the town, and on coming down was carried shoulder high by the crowd, an honour which was repeated on Monday when he pleased them by rising to a height of 600 metres.

From Airship to Aeroplane.

ON Saturday at the Henry Farman school at Mourmelon, Menard, the original engineer of the "Republique" and "Liberté"

dirigibles, successfully passed the examination for his aviator's certificate. Incidentally he is said to be the first French non-commissioned officer to pass the tests.

Training for the Manœuvres.

MANY of the French officers have been very busy training for the forthcoming manœuvres. On Saturday morning Lieut. Remy arrived back at Chalons, after being absent eight days. During that time he had covered, on his Henry Farman machine, 500 kiloms., his flights including stops, among other places, at Vendeuil, Douai, Arras, Longpre, Amiens, and Soissons.

On Sunday Capt. Marie, during a flight which lasted 1 hour 20 mins., twice made a circuit over Buoy, Cuperly, St. Hilaire, Suippes, and Mourmelon, while Lieut. Fequant flew over to Verdun with an officer on board, with a view to taking observations *en route*.

Fatal Accident to Lieut. Pasqua.

BY the fatal accident to Lieut. Vivaldi Pasqua last Saturday morning after a flight during which he had traversed about 130 kiloms., the Italian Army has been robbed of a very promising flyer. He and Lieut. Savoia had arranged to carry out a series of comparative tests with their respective aeroplanes, and the latter officer, mounted on a Henry Farman machine, left Centocelle and flew to Ladispoli and back, coming to earth after being in the air a little under two hours. A few minutes after he had risen from Centocelle, Lieut. Pasqua started off in pursuit on a Maurice Farman biplane. Returning to Centocelle he continued his journey to Civita Vecchia, and it was while he was making his way back from there that the motor stopped, and the machine fell from a height of about 130 metres. The unfortunate aviator was killed instantaneously, and his machine smashed.

Accident to de Baeder.

ALTHOUGH it was at first feared that the injuries sustained by de Baeder as the result of his accident on the opening day of the meeting at Cambrai on Saturday last would prove fatal, the later reports are reassuring. After mastering the Voisin biplane, de Baeder took up the Farman, while recently he had been using a Breguet biplane with which he had made many successful flights. For some time he had been at Douai, and wanted to fly from there to Cambrai. The elements, however, rendered this out of the question, and on his arrival at the aerodrome, de Baeder found the weather conditions all against flying. He nevertheless promised to go up at six o'clock, and although the wind was then very strong, he started off. The machine swayed a good deal, and it had just got past the crowd when it dived suddenly to the ground. The machine was badly broken, but de Baeder remained in his seat. He was rendered unconscious, and subsequent examination showed that one of his wrists and one of his ankles were broken, and his skull fractured. At first the doctors gave little hope of recovery, and the injured man did not regain consciousness until the following day. It is now reported, however, that he is out of danger, although it will be a very long time before he is quite well again.

Among the Telegraph Wires.

WHILE flying above Versailles on his monoplane on the 17th inst., M. Garros found his motor stopping. He attempted to glide down to the Place d'Armes, but failed to notice some telegraph wires which caught the machine and caused it to drop to the ground, a distance of about 10 metres. Fortunately the aviator escaped unhurt, but the machine will need extensive repairs before it can soar in its element again.

Spanish Royalty at Buc.

ON their way home through Paris, the King and Queen of Spain paid a visit to Mr. Maurice Farman's School at Buc. After Mr. Farman had explained the mechanism of his machine to their Majesties, short flights were made by the pupils, Capt. Duperron and Lieuts. Byasson, Cheutin, and Binda, and subsequently by Mr. Maurice Farman himself. On his descent the aviator was warmly thanked by the Royal visitors, and invited to pay a visit to Madrid in his aeroplane.

Paulhan Now Teaching.

DURING the past week or so, Paulhan has been giving lessons to M. A. Caille at Buc, and last Saturday this new flyer successfully made the necessary tests to qualify for his pilot's certificate. Subsequently he indulged in a short flight over the surrounding country.

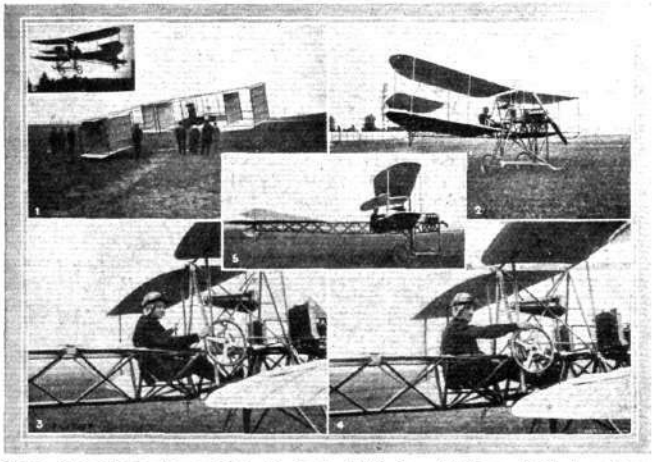
Sommer at Douzy.

TWO very satisfactory trials were made by M. Sommer on Saturday at Douzy with his new two-seater biplane. During the first trip Mme. Sommer was the passenger, while in the second Mme. Benoit accompanied M. Sommer. In each trip the altitude varied between 60 and 100 metres, while each voyage lasted between 30 and 40 mins.

Two days previously M. Sommer was testing a biplane destined for the Italian Government. He made one or two flights with passengers, and altogether covered about 60 kiloms. during three quarters of an hour.

Count Robillard Flies for an Hour.

USING one of the two-seated Antoinette monoplanes designed specially for use in the French Army, Count Robillard Cosnac, accompanied by Lieut. Clavinad, flew for an hour at Mourmelon on the 17th inst. During most of this time he was over the country. He has been actively engaged in teaching the one Army and one Naval officer to fly the two military monoplanes which are now ready.



Some interesting views of the Swiss-built Dufaux biplane which has been constructed by the Dufaux Brothers of Geneva. In No. 3 M. Henry Dufaux is in the pilot's seat, in No. 4 M. Armand Dufaux is in charge, and in Fig. 6 the machine is in flight. No. 1 is a Voisin machine, with M. Nigg at the wheel. The photographs, which are from the *Suisse Sportive*, were taken at the Viry Aerodrome, near Geneva.

Flying at Mont Saint-Michel.

A FOUR days' flying meeting had been arranged to start on Saturday at the Beaviour Aerodrome, situated on the foreshore at Mont Saint-Michel. A strong south wind precluded any flying before 7 o'clock, when Pischoff made a circular flight which lasted eight minutes. Strong winds also interfered with the flying on Sunday and Monday, but each day both Pischoff and Busson made short trips.

Flying Across Vienna.

USING a Vindobona biplane, Warchalowski flew across Vienna on the 18th inst. at an altitude of 700 metres. Altogether he covered about 90 kiloms., flying from Vienna-Neustadt to Stefansturm and back.

Across Long Island Sound.

USING the Henry Farman machine which Paulhan left behind in America, Mr. Clifford Harmon flew across the Sound from Garden City to Greenwich (Connecticut), a distance of 25 miles in 30 mins. on Saturday night. There was a strong breeze blowing at the time.

Aeroplanes at French Manœuvres.

AT the French Army manœuvres, which commenced at Verdun on Monday last, reconnaissance work was carried out both by the veteran dirigible "Ville de Paris" and Lieut. Fequant on his Henry Farman biplane, accompanied by Lieut. Sido, and both types of craft rendered valuable assistance.

AIRSHIP AND BALLOON NEWS.

"Ville de Lucerne" a Success.

DURING the month that the airship "Ville de Lucerne" has been in commission she has regularly made daily trips, except, of course, when the weather has been bad. On several days more than one trip has been made—as, for instance, on the 8th inst., when five excursions were made, the total number of persons carried during the day being 48. On the third trip the passengers included two little children, one 5 and the other 3 years old. In 15 days 21 ascents were made, and there was no difficulty in obtaining the full complement of passengers at £8 a head.

On the 14th inst. four trips were made in various directions over the different lakes, and also over the city of Berne.

Tests with "Clement-Bayard II."

AT last the troubles with the new Clement-Bayard airship appear to have been overcome, and on Sunday week she was out for over two hours, sailing to Soissons and back, during which there were six persons on board. On the previous Thursday a trip, lasting two hours, was made over the Compiegne country; while on the day before the airship was out for an hour, among the passengers being Col. Capper and Mr. Hamilton Fyfe of the *Daily Mail*. The airship cruised over the plain for some time, and on landing the passengers agreed there had been no thrill of excitement during the voyage. It had been very like travelling in a train.

Two voyages were carried out very successfully on the 16th inst. In the morning the vessel was taken to Breteuil, passing over Amiens *en route*, and after a safe landing had been made at Breteuil the airship rose again and reached her shed at Lamotte Breuil without incident. During the evening of the same day the airship was out again for an hour and a quarter, during which she sailed over Soissons. The vessel was also out for an hour on Tuesday, and cruised along the Valley of the Oise with seven passengers on board.

To Replace the "Deutschland."

ALTHOUGH not built as a passenger airship, the Zeppelin which made the voyage to Berlin a year ago at the request of the German Emperor, and which is now designated "L. Z. 6," has now had a passenger cabin fitted and been sent to Baden Baden. She will make passenger trips until the new airship which is to take the place of the "Deutschland" is completed. She has accommodation for ten to twelve passengers, and carries a crew of ten.

A New Italian Dirigible.

FOR about two hours on the 10th inst. a new dirigible balloon, 150 ft. long and 30 ft. in diameter, cruised about over Turin, and gave very satisfactory results. The new craft has been designed by Sig. Celestino Usuelli, and is fitted with a 100-h.p. S.P.A. motor.

Centenary of Montgolfier's Death.

ON June 26th, 1810, there died at Balaruc-les-Bains Michel-Joseph Montgolfier, whose name was made famous by his invention of the balloon. A series of fêtes were held at Balaruc to celebrate the centenary on August 17th last, and among the ceremonies was the unveiling of a tablet on the wall of the Etablissement Thermal, where the aeronaut died just short of the age of three score years and ten, having been born at Annonay on August 26th, 1740.

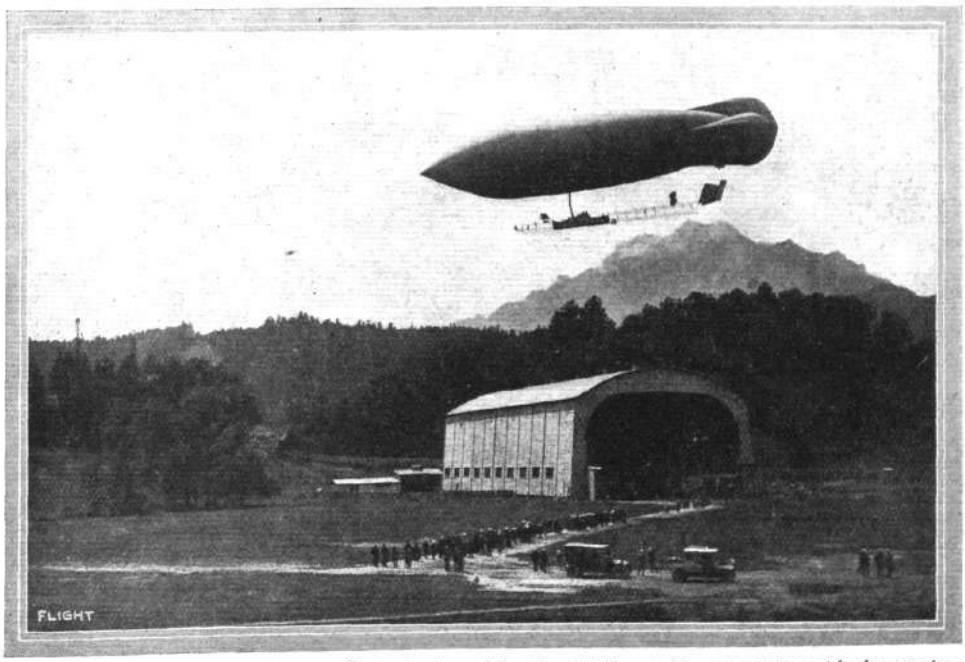
Firing at Balloons.

WITH the object of obtaining data in order to assist with the design of artillery for use against airships, some experiments were carried out under the command of Major Gross at Rugenwald on the Baltic coast recently. Two balloons were towed out to sea by the cruiser "Undine," and they were shot at by the guns on the shore. One balloon was brought down, and its line severed, while the second was burst by a shell exploding inside. The tests were watched by a representative of Krupp's.

Trials with "Parseval V and VI."

ON Monday an attempt was made to carry out some evolutions with "Parseval V" in connection with the parade at Posen. The wind, however, proved too powerful, and it was with difficulty that the airship was prevented from being blown away.

"Parseval VI" cruised for an hour and a half for her first passenger trip from Munich on the 14th inst. She carried sixteen persons including the crew.



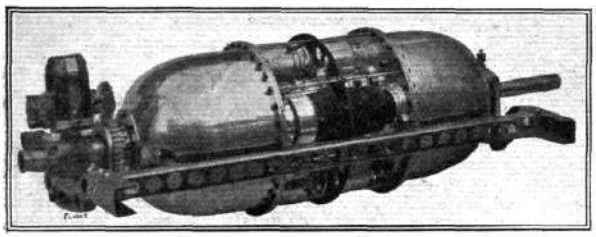
"Ville de Lucerne," the first airship in Switzerland, making its initial ascent in connection with the opening of the public service airship station which has been established on Lake Lucerne. This airship, built by the Astra Co., carried seven passengers on its first journey.

LAMPLOUGH'S "POSITIVE EXPLOSION TURBINE."

ROTARY motion is imparted to the machine positively by means of rollers bearing upon a curved plane or path.

The advantages aimed at are :—(1) Lightness, owing to the machine itself acting as a fly-wheel. (2) Effective cooling of the firing cylinders, thereby dispensing with water-jackets, radiators, connections, &c.

The machine works as a compound two-cycle. By compound is meant that the ordinary cycle of four is divided by two, the mixing and charging being done in one cylinder, the firing in the other. Another point is that all spring-controlled valves are dispensed with, the charge being drawn into and expelled from the charging cylinder in a positive and certain manner, the cylinder itself forming its own valve, the opening and closing of the inlet and outlet ports being accomplished by oscillating the cylinder in the receiver casing, the charge being drawn through the centre tube upon which the machine rotates.



Lamplough's "Positive Explosion Turbine."

In the machine shown herewith, four equidistant tubes, open at both ends, form the charging and firing cylinders, double pistons in each cylinder are connected by rods to the periphery of the oscillation ring at each end of the motor. These rings carry adjustable rollers that bear upon angular paths, and each angular path is surrounded with an outer ring which oscillates in bearings.

At every stroke of the pistons the oscillation of the ring in conjunction with the angular path forms part of a true spiral, compelling the shaft to rotate.

The reaction or return drive upon the roller path is caused by the oscillating or twisting action of the outer rings, which, being harnessed at their top and bottom points, on the outstroke of the pistons, exert an outward push on one roller and an inward push on the other.

Describing briefly the working of the motor by means of the annexed drawing :—

A is the inclined plane forming the roller path.

B is the outer ring oscillating upon the points FF.

CC are conical rollers.

D is the steel block rigidly fixed to the hollow stationary shaft D^1, upon the periphery of which the roller path is cut.

E is an adjustment for taking up wear upon the driving rollers.

H^1. Eccentric for oscillating charging cylinder.

H^2. Gas inlet holes from fixed shaft.

H^3. Point to which carburettor (not shown) is fitted.

J. Power piston, which also acts as an exhaust valve.

J^1. Power piston, which also acts as an inlet valve.

J^2. Exhaust openings in cylinder walls.

J^3. Inlet ports from receiver where the charge is stored by the charging piston ; these ports are uncovered just after the piston J commences to uncover the exhaust ports, the new charge sweeps the spent charge out through openings, J^2, and is compressed and fired in turn.

KK. Oil-retaining domes, which also form covers at each end.

LL. Spring-controlled glands to keep oil out of the central gas-chamber, and gas out of the working ends of the machine.

L^1. Spring, controlling glands in central gas-chamber.

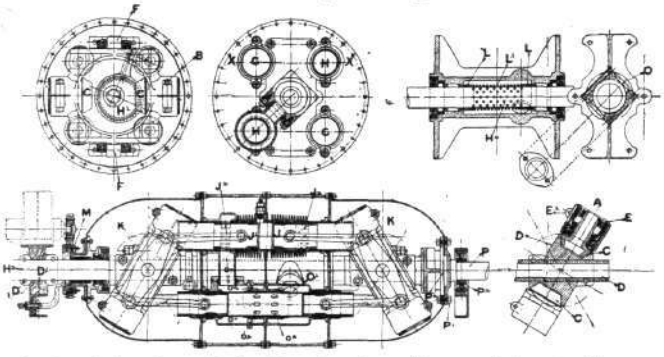
M. Gear wheel driving magneto and carrying conducting wires.

O. Outlets from central gas-chamber to charging cylinders.

O^1. Gas space communicating with central chamber through O.

O^2. Gas inlet ports to charging cylinder.

O^3. Gas outlet ports leading into receiver.



Sectional drawings of the Lamplough positive explosion turbine, showing how the pistons are connected to the oscillating ring at each end.

P. Rotating part of shaft.

P^2. End of main or fixed shaft shown dotted, to which are rigidly fixed the angular plane blocks D.

P^3. Ball-bearing for driving shaft and for supporting one end of machine.

The cycle is as follows :—

Charges are drawn into the charging cylinders, HH, every revolution, they are in turn forced into the receiver, O^4, from the receiver through ports, J^3, into firing cylinders, GG, where, after expelling the spent gases, they are in turn compressed and fired there.

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BY AEROPLANE TO THE SUN.

THERE is a sort of fascination in the idea of man's conquest of the air which appears to inspire imagination, and entice many inexperienced writers into the realms of fiction-making. The tale before us—by Mr. D. W. Horner—though its literary style is not too strong, is at least somewhat ingenious, and many of the details give indications of an inventive mind. The action takes place in the year 2000, when for the purposes of the story it is assumed to be quite in the ordinary course of things for aeroplanes and airships to navigate the outer space beyond the earth's atmosphere. Dick Stevenson owns an airship, constructed of a metal called "Zioomium"—a material which, in addition to being a non-conductor of electricity, possesses marvellous strength and lightness. To escape a proposal of marriage by a young woman (not to accept which would entail a heavy fine) the hero decides to take a trip to the sun and back, accompanied by some friends, the object ostensibly being to test the truth of a theory that the sun is a relatively cool body, and that its light comes from an electrical source, the rays giving out heat only upon contact with the earth's atmosphere. Judge of the hero's feelings when, having started on his way, he discovers on board his ship two girls, one of whom is the very female from whom he fondly imagined he was fleeing! However, he makes the best of things and continues on his course, being anxious to carry out his investigations. The theory as to the sun proves correct, and then comes an exciting encounter with the weird creatures that dwell thereon, from whom the venturesome girls have to be rescued. As was naturally to be expected, long before the return to earth Dick falls a victim to the fascinations of the fair heroine, and all goes well. The book aims at up-to-dateness, for in addition to the airship being propelled when beyond the earth's atmosphere by radium motors, there is an encounter during a descent at the North Pole with an American Polar expedition. We hardly think, however, that the plentiful use of slang by the male characters is to be regarded as a good feature of the book.—(*The Century Press.* Price 6*s.*)

CORRESPONDENCE.

*** *The name and address of the writer (not necessarily for publication)* MUST *in all cases accompany letters intended for insertion, or containing queries.*

Correspondents asking questions relating to articles which they have read in FLIGHT, would much facilitate our work of reference by giving the number of the letter.

NOTE.—*Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.*

THE ROYAL AERO CLUB AND FLYING OVER CITIES.

[703] With reference to the prizes which are being offered for aeroplane descents in the parks in and near London, the Committee of the Royal Aero Club has already discouraged any attempts of this nature, inasmuch as it does not consider that descents, unless proper precautions are taken, can at present be made without danger to the public in a city so densely populated as London. An offer of a prize of £1,000 involving such a risk has recently been refused by the Royal Aero Club.

HAROLD E. PERRIN,
Secretary Royal Aero Club.

THE BOYD ENGINE.

[704] In your last issue you were good enough to give a notice *re* the above.

One remark may possibly lead to a misunderstanding, viz., to the effect that if the engineers can realise their expectations, the result will be very satisfactory. This suggests that this design is simply a matter of theory, whilst, as a matter of fact, the experiments have been going on for a number of years and numbers of engines have been made. They have been seen running by a number of engineers. It is because of these experiments and their grand results that I claim this engine to be far ahead of any engine in existence.

I shall feel obliged if you will kindly insert this to remove a possible misconception.

THE INVENTOR.

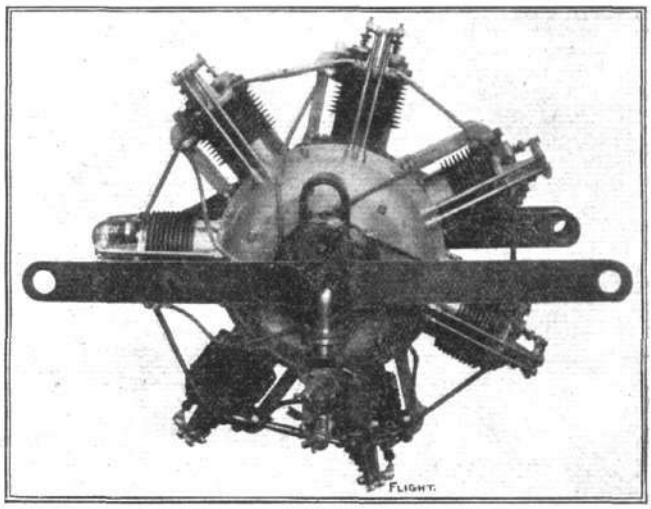
BIPLANE GLIDER.

[705] We have just completed a biplane glider, and enclose photographs which we hope will interest the readers of your invaluable paper. The main planes have a spread of 30 ft., and the machine an overall length of 24 ft.; the total area is 260 sq. ft. The biplane is built entirely of ash, and the interesting part of the machine is the control (see photo.). The rudder is worked by the feet, the elevator by a forward movement of the steering wheel, and the ailerons by means of rotating the wheel. The tail elevator is also adjustable by a special lever; all the struts, &c., are cut to the correct stream line form, and the whole machine can be taken in half from the middle for purposes of transit, &c. A few preliminary experiments showed that the machine is not only strong, but showed particularly great longitudinal and lateral stability. There are two or three very good hills in the neighbourhood of Keynsham, which is four miles from Bristol, and as we understand that the Bristol Aero Club have a glider but no ground, it is possible that one of these hills might meet their requirements.

Keynsham. ELDON AND GILBERT BUSH.

ANOTHER ROTARY ENGINE.

[706] Enclosed please find photo of rotary engine built by me for aeroplane work; my engine seems to have in its construction and working all the claims of the "Dreadnought," advertised in your paper this week.

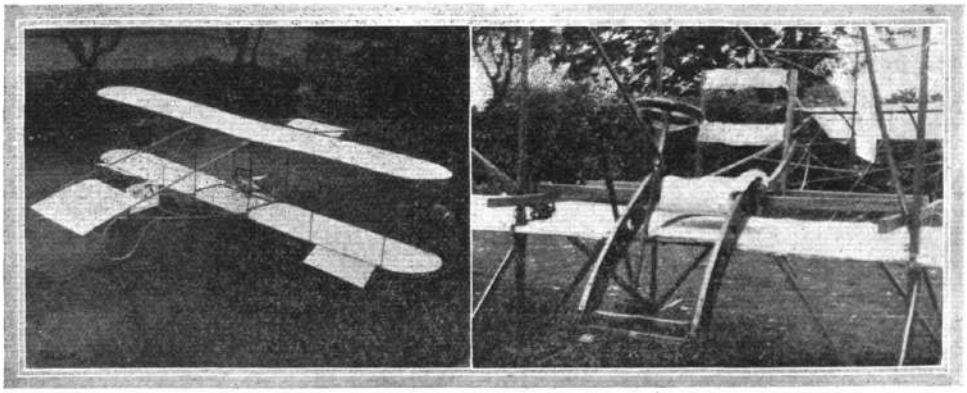


Mr. Fletcher's rotary engine.

My engine has mechanical valves, and the exhaust is helped away by holes in the cylinder-walls.

The crank-case is cored, to take the gas and air to the cylinders, so it does *not* mix with the lubricating oil.

The valves do *not* need balancing, as they are closed by springs, and assisted by centrifugal force, and opened by cams.



MESSRS. E. AND G. BUSH'S GLIDER.—On the right the control gear is shown in detail.

I lubricate with ordinary motor oil at 1*s.* 10*d.* per gallon, and the engine runs very cool, and consumes about 3½ to 4 gallons of petrol per hour at full speed, all open.

It is 8 years ago since I built my first rotary engine. If you care to send a representative I would show the engine running.

The engine is 7-cyl. 110 by 130 mm., magneto ignition.

Manchester. C. A. FLETCHER.

WHISTLE *V.* GAUGE.

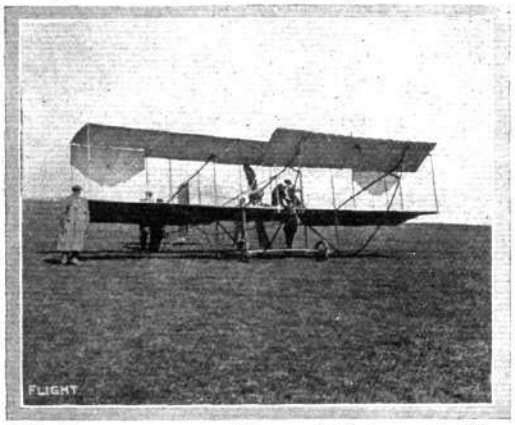
[707] I beg to ask Capt. Dickson through your columns whether, in his opinion, a good, plain, and direct reading wind velocity gauge would or would not be the *best* speed alarm for aviators.

I have been experimenting with an instrument with ¼ sq. ft. pressure face which gives practically equal readings per mile per hour from 0 to 75 (the home-made instrument does not read below 7 m.p.h. owing to a stop put in, because I reckoned there was too much friction below that pressure). I had accurate results against a certified anemometer (which had to be clocked, of course) at various speeds—8 to 10, 18–20, 30–32, 35, 40–42, 46–48 m.p.h., but did not meet any winds above these speeds, but the pressure by weight was about accurate at 70 m.p.h. So far I have not been encouraged to put this little instrument on the market, but if Capt. Dickson thinks such an instrument would be of *real* service to aviators, I will endeavour to place it on the market, the cost for a well-made instrument being 30*s.* to 50*s.*, according to the number likely to be sold.

Portsmouth. J. W. SEDDON.

THE LATE C. S. ROLLS AND THE SOMMER.

[708] I enclose a photo of the late Hon. C. S. Rolls on his Sommer machine, taken at Eastchurch at the end of last April. This may be of interest, as I have not seen a photo of this machine



published in any paper yet. I do not think he actually did any flying on it, as the day this was taken it was only his second day on it, and he left for Nice a few days later.

Aldershot. F. R. HARFORD.

AERONAUTICAL TERMINOLOGY.

[709] With reference to your article on this subject, there is one point in our terminology which certainly needs to be cleared up. I refer to the type of machine called by some a *Tandem Biplane*—*i.e.*, a machine with two equal supporting surfaces placed one behind the other—*e.g.*, the historic Langley machine. This description is one which appears to me incorrect and undesirable, at any rate according to common usage. Its adherents may say, "there are, in point of fact, two planes, placed in tandem, therefore *Tandem Biplane*." But I maintain, and I think the majority will agree with me, that the idea conveyed by the words *monoplane*, *biplane* and *triplane* is, in the ordinary sense, that of a single surface, or of one *above* the other, or of three *superimposed* planes, *i.e.*, the terms describe the vertical position of the surfaces, and not the horizontal. To my mind, the term *Tandem Biplane* conveys the idea of what its users would call a *Tandem Quadruplane*—*i.e.*, a machine made with four planes of equal size, two in front superimposed, and two in the same position behind. I suppose if Mr. A. V. Roe turned out a machine like his present triplane, only with the tail planes as large as the front ones, these people would call it a *Tandem Sextuplane*, an incredibly awkward and ugly description. Now since these terms, monoplane, biplane, &c., undoubtedly refer in common usage to the vertical position of the surfaces, I urge that the correct way to describe a *Tandem Biplane* is either a *Tandem Monoplane* or, better, a *Double Monoplane*. The other types to be called *Double Biplane*, *Double Triplane*, &c. The word *tandem* may be used if desired, though it appears unnecessary, for it is impossible to imagine a machine in which the second set of surfaces were not behind the first; on the other hand, the word *double* does convey the idea intended, namely, a duplication of the chief supporting surface or surfaces.

Lochearnhead. DOUGLAS GRAHAM.

[The above suggestion that "double" is a better prefix than "tandem" to signify modified machines of the monoplane, biplane and triplane classes having two sets of main surfaces, one set placed behind the other, was adopted by us in the first instance when we compiled our original glossary, prior, as a matter of fact, to the publication of the first number of FLIGHT, and this term still appears in the glossary contained in "Flight Manual." It is rather a moot point as to which is the better expression.—ED.]

A 120-150-H.P. ENGINE WANTED, AND PROFESSIONAL *VERSUS* AMATEUR FLYERS.

[710] If you can find room for that portion of this letter referring to engines I shall be obliged. I should also be glad if you can publish the remainder, as I should like to know how other aviators feel on the point.

As soon as certain Patent Office formalities are completed, I shall start the construction of a new design of monoplane; it is original and will fly, and, needless to add, as its parent, I expect great things of it; but to obtain the best results I must have a powerful and *reliable* engine of at least 120-h.p., and preferably one of 150 to 160-h.p., weight not to exceed 300 to 400 lbs., fuel consumption as much under 3½ lbs. per actual h.p. developed (to attain a speed of 60 to 70 m.p.h.) as is possible. Can any British firm supply me within two months of the 22nd inst., or must I fall back on the Gnome? I want my monoplane to be absolutely all-British, and I have a latent hope that perhaps some English firm—the "Boyd" or the mysterious "Dreadnought" people may possess sufficient enterprise to build what I require. Poor Rolls, when urging me to hurry forward the completion of my aeroplane, mentioned the former as a possible likely type, and was to have let me know more about it after Bournemouth—but the gods ruled otherwise, and I have not met anyone else who really knows much about British engines, hence this appeal through your widely-read columns.

Now for a growl! I notice with a wee twinge of regret that the *Daily Mail's* second prize of £10,000 seems likely to follow the flight of the first, to go to assist our Continental neighbours in beating us. I suppose it's all in the game, and has to be swallowed in a sporting spirit; but, all the same, it strikes me as being a bit rotten, especially as I imagined that the prize was offered more or less on patriotic grounds, and with the idea of giving British aviators the support and encouragement they so sorely need. Even at our own meetings it seems almost hopeless to struggle against the lavish expense and consequent unlimited facilities afforded the professional pilots of the various competing Continental firms. What they failed to secure was, with one or two notable exceptions, gathered in by British aviators of a similar type. Just where the unfortunate private owner and "gentleman rider"—if I may borrow a racing term—comes in I do not know. It was the amateur and sportsman who first risked life, limb and capital in seeking to develop the art in this country; and, without grudging the professional his plums, or full, and brimming full, measure of praise for his skill and aid in popularising the science and sport of aviation, I still think that private owners, men who have studied the science of the game, who have spent long months and even years in research and experiments and dipped deeply into their financial resources, should be given, at least, an equal chance of success, by having a certain portion of the prize-money at each meeting devoted wholly and solely to events for airmen who have bought or built and are prepared to pilot their own machines. This would bring scores into the game who at present must stand aside because it is not possible for the majority of us to take—up and down the land—a crew of skilled mechanics, spare engines and machines, and enough spare parts to stock a good-sized store. The average banking account won't stand the strain. Consequently the pro. with a firm behind him to act the part of Mecacuas, carries all before him. Of course, if the present state of affairs is really and truly in the best interests of rapid development—well and good. I am quite sure that in that case the private man will humbly stand aside and wait until he's rung for. But is it? Healthy competition and rivalry among amateurs is the life of every sport, and if private owners are compelled to play a lone hand or become mere spectators, I am afraid the majority will drop out

voting the game too slow. With apologies for this long-winded epistle.

W. F. C. STEUART-SETON.

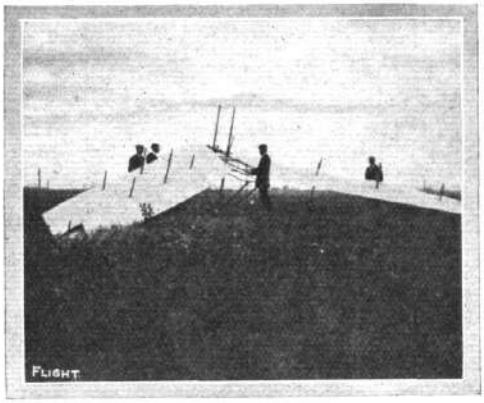
P.S.—Have just had a wire *re* altitude record. My hearty congratulations to Armstrong Drexel on his splendid achievement.

THE LOCKE GLIDER.

[711] I promised some time ago, in a letter you published, to tell you about my experiments with a glider then in course of construction on lines which, unhappily for me, had been to some extent anticipated by Lieut. Dunne.

The glider is now more or less completed, after an annoying delay, and on Tuesday, July 26th, I attempted flight at Barking. The wind was not strong enough, however, and as the construction of the machine and the nature of the ground made a launch impracticable without the help of the wind, I have, unluckily, no success to report. But with time and patience great things may happen yet, and when they do you shall know of them.

The accompanying photo was taken at the time of the trial. It



gives some idea of the glider's chief characteristic—that is, its broad-arrow shape. The planes meet at an angle of 90°, and are 37 ft. across from tip to tip. I don't think I'll give you any further details now.

The tousled-looking person standing in the angle at the back of the glider is myself. Of the three people on the other side of the planes, those bareheaded are friends who underwent a vast deal of violent exertion and acute discomfort (Barking has many thistles) in order to help me fly. My associate in building the glider unfortunately does not appear. He was working the camera.

I hope to have something really interesting to tell you before very long.

Chingford. J. C. LOCKE.

THE SHORT-FARMAN BIPLANE.

[712] I notice in your issue of FLIGHT, dated July 23rd, a block reproduction on page 570 with the title "Grace on his 'Short' gets up for the Altitude Contest." Is not this a mistake? The machine shown in flight is in my opinion a Farman.

Burnley. H. HALSTEAD.

[The Short biplane used by Mr. Grace at Bournemouth was of the Sommer-Farman type.—ED.]

THE CYCLOPLANE.

[713] In letter No. 599 Mr. Gaunt mentions that I confused his Cycloplane with another man's Cycle-aeroplane; but if Mr. Gaunt looks again at my letter, he will see that I started a new paragraph on mentioning the other machine.

No one has as yet, however, volunteered any information of that other machine, and I should still be glad to hear if anyone has heard of it.

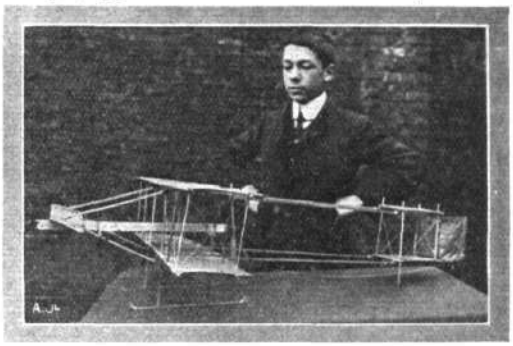
With reference to Mr. Gaunt's cycloplane, I should like to ask Mr. Gaunt if what is lost in the friction of the tyres makes up for the increase of head resistance of the planes? As for its utility in turning corners, it seems hardly worth while to fill up half the road in order to save a few spills.

Charmouth. O. D. A.

MODELS.

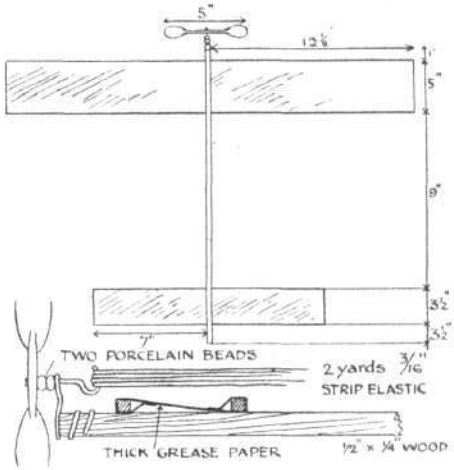
MODEL BIPLANE.

[714] Possibly some of your readers may be interested in the accompanying photo of a model Farman that I have just finished.



It is made to $\frac{1}{7}$th scale, and I obtained all my materials from A. Melcombe, of Bedford.

I also enclose a rough sketch of a tail-first monoplane that will fly or 150 ft. It is a very simple model, and costs very little to make. Quite a fascinating experiment is to launch the model towards the ground, for when about a foot from the earth it will fly horizontally for a short distance at that altitude, and then rise gracefully in



the air. I have not used any dihedral angle as I find that it flies much steadier without. I should like to draw the attention of other readers to the use of two porcelain beads as a thrust bearing for the propeller; they make a splendid job. In the Farman, however, I have used a little ball-bearing.

Stafford. F. V. WEBB.

MODEL CLUB FOR HARLESDEN.

[715] I am writing to ask if there are any persons interested in the construction of models, and desirous of forming a model club in Harlesden, if they would kindly communicate with me. I have made three or four models, and am at present constructing an Antoinette model.

4, Craven Park Road, Harlesden. F. GODDARD.

FARMAN MODEL.

[716] Could any reader of FLIGHT who has had the necessary experience kindly let me know what is a reasonable limit for the weight of a Farman biplane $\frac{1}{7}$th scale, and also what size and section of wood is recommended for the main spars?

W. Brompton, S.W. E. H. MOULD.

DEMOISELLE MODEL.

[717] I am a constant reader of your most valuable paper, and as I now have two or three difficulties on hand, perhaps some of your readers might help me. I have been interested in aviation for the last three years, and have now developed a considerable connection in the model-making line. I have made several very successful models, and I have flown one model, "Dragonfly III," over 200 yards, and that being a particularly heavy model for its spread and power.

I wish to make a scale model of Santos-Dumont's "Demoiselle," and I should very much like to know how I can adapt an elastic motor, geared or otherwise, to the particular triangular frame. I should also like to know whether there are any "Demoiselle" models on the market, and, if so, what firms supply them, and how much they cost.

Stoke-on-Trent. THOMAS LOCKETT, JUN.

MODEL CONSTRUCTION.

[718] If Mr. H. Henderson's query (No. 632) refers to the great difficulty of securing the "ends" of vertical struts, &c., to the planes named above and below by reason of the said ends splitting when the fixing pins are driven in, owing to the struts being of necessity so small in section, he could try this plan, which I have found most satisfactory and always adopt in such small work. Taper ends of struts and other supports about half an inch in from ends towards their centres, now take a strip of very fine muslin half an inch wide and long enough to wrap quite round twice, dip muslin in very thin hot glue, quickly wrap round ends and revolve between finger and thumb till quite smooth; put by to dry. Very fine pins can then be driven home to their heads without splitting the struts, after which carefully smooth down with fine glass-paper, and paint or stain as desired, after fixing all struts; then brace with the fine tinned wire used by florists to tie "buttonholes," &c. Hoping this helps to answer this rather scant inquiry.

Newport Pagnell. HENRY BATH.

COMPRESSED-AIR ENGINE.

[719] Could any of your readers kindly give me an idea of the bore and stroke of a compressed-air engine required to drive a model aeroplane about 5 ft. from tip to tip.

Bristol. CECIL J. W. POTTER.

⊛ ⊛ ⊛ ⊛

Blériot Spare Parts in U.K.

IN view of the rapidly-increasing number of Blériot monoplanes in Great Britain, M. Blériot has made arrangements to keep a very large and complete stock of spare parts for all his machines at his London headquarters at 163, Regent Street.

"Continental" Success at Lanatk.

WE are informed that pilots using Continental aeroplane material at the recent International aviation meeting at Lanark were well to the fore, nearly 5 per cent. of the prize winners' machines being fitted with this famous fabric.

Shell Spirit at Lanark.

AT Lanark, the airmen who trusted to Shell captured 55 first prizes, 15 seconds, 10 thirds and 2 fourths; and of the £7,985 distributed in prize-money, they received no less than £6,765. It is noteworthy too that Shell spirit was preferred as much by the foreign as the home aviators.

⊛ ⊛ ⊛ ⊛

PUBLICATIONS RECEIVED.

L'Aeroplane pour tous. By Louis Lelasseux and Rene Marque. Librarie Aeronautique, 32, Rue Madame, Paris.

Catalogue.

Magneto Eisemann. The Eisemann Magneto Co., 43, Berners Street, W.

⊛ ⊛ ⊛ ⊛

RECORDS.

Distance and Duration.—Oliesiaegers (Belgium), at Rheims, on a Blériot monoplane with Gnome engine: 244·309 miles in 5h. 3m. 5⅘s.

Speed.—J. Radley (Great Britain), at Lanark, on a Blériot monoplane with Gnome engine: 1 mile in 47⅘ secs. = 75·95 m.p.h.

Altitude.—J. A. Drexel (Great Britain), at Lanark, on a Blériot monoplane fitted with Gnome motor: 6,750 feet in 52 mins.

Aeronautical Patents Published.

Applied for in 1909.

Published August 25th, 1910.

21,189. W. J. POTTER. Aerial navigation.
24,606. C. E. JOBLING. Flying machines.

Applied for in 1910.

Published August 25th, 1910.

236. J. P. WIESEN. Aeroplanes.
3,432. J. G. RAMEL. Automatic balancing and steering.
3,506. B. LOUTZKY. Aeroplanes.

DIARY OF FORTHCOMING EVENTS.

British Events.

1910.		1910.	
Aug. 29-30	Dublin.	Sept. 12-17	Burton.

Foreign Events.

1910.		1910.	
Aug. 25-Sept. 4	Havre-Trouville.*	Oct. 15-Nov. 2	Paris Aero Show.
Sept. 11-18	Bordeaux.*	Oct. 18-25	St. Louis. Gordon-Bennett Balloon Race.
Sept. 24-Oct. 3	Milan.*		
Sept. 25-Oct. 3	Biarritz.		
Oct. 15-23	New York. Gordon-Bennett Aviation Cup.	Dec. 4-18	Marseilles.

* International.

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